# THE Soybean Digest

MARCH • 1961

VOLUME 21 • NUMBER 5

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# THE Soybean Digest

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IN THIS ISSUE




## THE SOYBEAN DIGEST

EDITOR ..... *Geo. M. Strayer*

MANAGING EDITOR ..... *Kent Pellett*

BUSINESS MANAGER ..... *Geo. McCulley*

DIRECTOR OF ADVERTISING AND CIRCULATION ..... *David B. Bramson*

OFFICES

*Business, publication, advertising and circulation, Hudson, Iowa. TAylor 5-3296.*

ADVERTISING REPRESENTATIVES:

*Art Hutchison and David Hanley, Room 1517, 228 N. LaSalle, Chicago, Ill. STate 2-9211.*

*John K. O'Donnell, 153 Seaman Ave., New York 34, N. Y., LO 7-5010.*

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**Objectives of the American Soybean Association** include the bringing together of all persons interested in the production, distribution and utilization of soybeans; the collection and dissemination of the best available information relating to both the practical and scientific phases of the problems of increased yields coupled with lessened costs; the safeguarding of production against diseases and insect pests; the promotion of the development of new varieties; the encouragement of the interest of federal and state governments and experiment stations; and the rendering of all possible services to the members of the Association.

# EDITOR'S DESK

. . . By GEO. M. STRAYER

**WE DON'T WANT $2.30 SUPPORT** At this writing it is difficult or impossible to know what the support price on 1961-crop soybeans will be. Various figures have been quoted, and until an official announcement is made anything can happen.

The position of the American Soybean Association on 1961 soybean support prices has been made known. On last month's editorial page I tried to state it as plainly and concisely as possible.

Now we have a feed grain program under consideration. Corn would be supported, under that program, at $1.20 per bushel. Acreage reductions of at least 20% would be required to qualify for supports. With present storage stocks of corn some program is necessary. We certainly do not oppose this or any program to bring production and sales together.

However, we do oppose the efforts of those persons who would place a mandatory price level of $2.30 per bushel on soybeans in this same program! How soybeans got mixed up in the corn and grain sorghum programs is hard to conceive. But they have us there!

The current high selling price of soybeans on the market will, unless unforeseen forces enter the picture, bring the 2-to-2½-million-acre soybean acreage increase we need in 1961. The support price will not materially influence acreage, for it is well below the selling price.

But a $2.30 soybean support price will immediately bring huge increases in peanut, sunflower, rapeseed, mustardseed, copra, palm and other oilseed materials production all over the world. We will immediately hold an umbrella over the world-wide production. Then when the 1961 crop is harvested we will have high-priced soybeans and no place to go with them! We will have priced ourselves out of the market at home and abroad, will have sponsored more urea production for ruminant feeding here at home, the U. S. government will be the buyer of huge quantities of high-priced soybeans — and the commodity on which we have worked diligently over a period of years to increase markets and production at a steady and constant rate—and which has absorbed 12 million acres from other surplus crops since the war without ever having been in surplus troubles, will become just another surplus crop. When Uncle Sam becomes the buyer the support and the selling price become the same, there is no opportunity for the play of the markets, and the next step is acreage controls, toll crushing and a host of other unwanted programs.

Your American Soybean Association officials have endeavored to present these views to members of Congress and USDA officials. Personally, I am keeping my fingers crossed on what may happen to us. But I also have faith that even in the rush of a new Administration to prove its worth we in the soybean industry will not be forced into absorbing the unwanted problems of commodity groups that have not been able to solve their own problems.

Based on $1.20-per-bushel supports on corn we should have soybean supports for 1961 of no more than $2.16 per bushel. That price will allow us to continue our constructive efforts to merchandise our commodity and continue to expand production to meet the market needs.

**MARKET WORK PAYS OFF** Dramatic demonstration of the manner in which market development work on soybean products can be made to pay off is the recent purchase—all for dollars—of 50,000 metric tons of soybean oil by the Spanish government. American embassy officials in Spain, including our agricultural attache, have worked long and hard assisting the Spanish government to get itself in a better foreign exchange position. The work has paid off.

During this period of time the Spanish people, along with their government, through sales of soybean oil under P.L. 480 and through the market development work carried on there by the Soybean Council, have learned that soybean oil is a high quality economic product.

There were some dollar purchases of soybean oil by Spain last year, but this 50,000-ton order, placed with private business in the United States with no U. S. government funds involved, is real and concrete evidence of what happens when properly conducted market development work begins to pay off.

To William Lodwick, U. S. agricultural attache in Spain, who has worked long and hard with the Spanish governmental representatives on this matter, we doff our hats!


**EEC (European Common Market) took over one-third of U. S. exports of soybeans in 1959. Chart compliments of the Bunge Corp.**

## Outlook in Common Market Clouded

GROPINGS of the European Economic Community (Common Market) toward a common agricultural policy throws something of a cloud over the future of U. S. agricultural exports to the six member countries until the exact form the policy will take is known.

The outlook for soybeans does not look so bad, according to Harry S. Hukins, the Bunge Corp., New York City. Mr. Hukins points out no proposals have been made for soybeans and there is a good chance for imports of soybeans into the Common Market to remain free. The proposed tariff structure is for oilseed meals to be admitted free of duty but crude soybean and cottonseed oil for edible use will bear a 10% duty, and duty on processed oils will be higher.

The Common Market, which includes West Germany, France, Italy, Belgium, Holland, and Luxembourg bought over one-third of total U. S. exports of soybeans in 1959, and almost one-quarter of our exports of vegetable oils.

## Billion-Bushel Crop Needed by End of 60's

RAPIDLY EXPANDING uses for soybean meal point to a need for a billion-bushel soybean crop each year by the end of the 60's, according to T. A. Hieronymus, University of Illinois grain marketing specialist.

Such an increase would require doubling the present annual crop of about 500 million bushels.

As more of the world's population is better fed, more and more soybean meal will be needed to supply protein for producing animal products. High-protein soybean concentrates will be needed to supplement feed grain for livestock. During the past 10 years, use of feed grain has increased 2.6% each year. If this increase continues, 60% more protein supplement will be needed in 10 years.

Hieronymus points out that the soybean is two products rather than one. It is a high-protein food and feedstuff and a relatively high-quality liquid oil, used for food and industry. These two products are about equal in value. Protein feed, however, is in short supply and has a rapidly expanding market. Soybean oil is in abundant supply and has a slowly expanding market. One product cannot be made without the other; therefore marketing is difficult.

Soybean response to $P_2O_5$ and $K_2O$ fertilizer on a deficient fine sandy loam with a pH of 6.6. Left row (28.1 bu./a.) had 256 lbs. $P_2O_5$ and 64 lbs. $K_2O$ (plowed under) and right row (12.1 bu./a.) had no fertilizer. July 15, 1958.

Soybean response to 64 lbs. of $K_2O$. Left row (19.5 bu./a.) had 64 lbs. $P_2O_5$ and 64 lbs. $K_2O$ and right row (4.9 bu./a.) had 64 lbs. $P_2O_5$ and no $K_2O$. Example of soybean yield decrease due to applying phosphorus and no potassium on a soil which was very deficient in both nutrients. Control (no treatment) plot yielded 12.1 bu./a. July 15, 1958.

Soybean response to 144 lbs. $P_2O_5$ and 64 lbs. $K_2O$ (right row—20.6 bu./a.) and no fertilizer (left row—12.1 bu./a.). Soil was a fine sandy loam very low in available phosphorus and potassium. July 15, 1958.

# Soybean Yield Responses to Fertilizers[1]

By R. J. MILLER, J. T. PESEK and J. J. HANWAY

INTEREST in more efficient soybean production, including profitable yield responses to fertilizers, has increased with the demand for more soybeans for processing. Although soybeans generally are less responsive to fertilizers than many other crops, they do respond to good soil and crop management practices. Soybean yield responses to fertilizer applications have been obtained on soils testing low to very low in available phosphorus and/or potassium, and in some cases these responses have been highly profitable. A discussion of the results from a number of soybean fertility experiments recently conducted in Iowa will be presented in this article.

[1] Journal Paper No. J-3989 of the Iowa Agricultural and Home Economics Experiment Station, Ames, Iowa. Project No. 1189. Contribution from the Agronomy Department.

TABLE 1. SOYBEAN YIELD RESPONSES OBTAINED FROM DIRECTLY APPLIED AND RESIDUAL FERTILIZERS

| Pounds of fertilizer per acre | | Average yield response in bushels per acre from fertilizers* | |
|---|---|---|---|
| | | Direct | |
| $P_2O_5$ | $K_2O$ | application | Residual |
| 30 | 0 | 0.7 | 0.2 |
| 60 | 0 | 1.3 | 0.1 |
| 0 | 30 | 2.4 | 1.0 |
| 0 | 60 | 4.7 | 2.4 |
| 60 | 60 | 6.4 | 2.9 |

* Yield of control (check) was 21.3 bushels per acre.

## Direct and Residual Fertilization

A common question in the past has been whether to fertilize soybeans directly or to apply the fertilizer on the other crops in the rotation and permit the soybean plants to depend wholly on the carryover or residual fertilizer to meet their needs. This latter practice has been widely recommended in the past.

In an experiment located in northeastern Iowa on a soil with a pH of 6.0 and testing low in available phosphorus and potassium, soybean yield responses to $P_2O_5$ and $K_2O$ applications made during the current and previous years were measured. The data in table 1 indicate that yield responses were obtained for both directly applied and residual $K_2O$, especially for the $K_2O$ applied directly to the soybeans, but only small yield responses were obtained for the $P_2O_5$ fertilizer.

In three other experiments located in north central Iowa on soils testing low to low-medium in nitrifiable nitrogen and very low to low in available phosphorus yield responses to nitrogen were small and not profitable. However, yield responses to 60 pounds per acre of $P_2O_5$ ranged from 2.0 to 5.7 bushels per acre for direct application and from −0.8 to 3.3 bushels per acre for residual or carryover. In some cases yield responses to $P_2O_5$ were found to be profitable.

In another study located in northeastern Iowa, rates of $K_2O$ applied in 1957 increased 1958 soybean yields on a soil with pH of 5.7 and testing low in available phosphorus and potassium. Although the yield responses for residual $K_2O$ in 1958 were somewhat higher than the responses obtained from directly ap-

TABLE 2. AVERAGE YIELD RESPONSES TO POTASH FERTILIZER APPLIED IN 1957

| Pounds of $K_2O$ disked in | Average soybean responses in bushels per acre to fertilizer applied in 1957* | |
|---|---|---|
| | 1957 (direct) | 1958 (residual) |
| 50 | 1.7 | 1.6 |
| 100 | 3.5 | 3.7 |
| 150 | 3.3 | 4.1 |
| 200 | 4.3 | 5.9 |
| 250 | 3.8 | 5.3 |

* Yield of control: 35.5 and 22.6 bushels per acre in 1957 and 1958, respectively.

TABLE 3. SOYBEAN YIELD RESPONSES IN BUSHELS PER ACRE FROM DIRECT APPLICATIONS OF STEER MANURE AND COMMERCIAL FERTILIZER

| Pounds of nutrients per acre | | | Source | Average soybean yield response in bushels per acre to fertilizers applied in 1956* | |
|---|---|---|---|---|---|
| | | | | 1956 (direct) | 1957 (residual) |
| N | $P_2O_5$ | $K_2O$ | | | |
| 0 | 48 | 128 | fertilizer | 11.1 | 4.8 |
| 40 | 48 | 128 | fertilizer | 12.2 | 5.6 |
| 40 | 48 | 128 | manure** | 11.7 | 5.1 |
| 80 | 96 | 256 | fertilizer | 15.5 | 9.9 |
| 80 | 96 | 256 | ½ fertilizer and ½ manure | 18.1 | 9.7 |

* Yield of control: 17.8 and 16.9 bushels per acre in 1956 and 1957, respectively. ** Four tons per acre; no bedding in manure.

plied $K_2O$ in 1957, (table 2) the soybean check (control) yields in 1957 were 12.9 bushels per acre higher than in 1958. Indications are that yield responses in bushels per acre for residual $K_2O$ fertilizer (1958) were as large or larger than those obtained for directly applied $K_2O$ (1957). The relative increase in soybean yields due to $K_2O$ was about twice as large in 1958 as it was in 1957.

### Manure and Mineral Fertilizers

An attempt was made to determine the relative value of manure as compared to commercial fertilizers for fertilizing soybeans grown on a silt loam with a pH of 6.1 and testing medium in nitrifiable nitrogen and low in available phosphorus and potassium. Soybean yield responses (table 3) were essentially the same for the steer manure and the commerical fertilizer broadcast and disked in at rates which supplied comparable amounts of available nitrogen, phosphorus and potassium to the soil. In setting up the treatments, it was assumed one-half the nitrogen and all the phosphorus and potassium in the manure would become available during the first growing season.

The 1956 soybean yield responses were much larger for the various fertilizer treatments applied in 1956 than the responses obtained in 1957 for the carryover effect (residual) of the fertilizers. Although the yield responses from the residual effect of treatment were substantially smaller in 1957, the relationship between the manure and the commercial fertilizers as sources of nutrients remained the same as was found in 1956. The results of this experiment indicated that most of the yield response was from the phosphorus and potassium applied, regardless of the source of the nutrients.

### Band Fertilization With $K_2O$ and Lime

An experiment designed to study the effects of $K_2O$ and lime on the yield of soybeans was conducted on a potassium deficient soil with a pH of 5.7 located in northeastern Iowa. The potassium and lime were banded together and on opposite sides of the row at seed level 3 inches from the row shortly after the plants had emerged. Excellent yield responses were obtained for the potassium applications but none for the lime. Judging by the yield responses for the potassium treatments, (table 4) the 25 pound rate of $K_2O$ was the most profitable rate of fertilizer used. Lime appeared to have no effect on soybean yields when applied either with or on the opposite side of the row from the potassium in this experiment even though the soil pH was below 6.0.

TABLE 4. SOYBEAN YIELD RESPONSES IN BUSHELS PER ACRE FROM BAND APPLICATIONS OF $K_2O$

| Pounds of $K_2O$ per acre | Soybean yield responses in bushels per acre* |
|---|---|
| 25 | 9.5 |
| 50 | 10.4 |
| 75 | 8.6 |
| 100 | 10.9 |

* Yield of control: 19.6 bushels per acre.

## Conclusions

Some tentative conclusions made on the basis of the results from experiments reported are:

1—Profitable soybean yield responses can be obtained from fertilizers on soils testing low to very low in available phosphorus and/or potassium.

2—Both directly applied and residual (carryover) fertilizers increase soybean production on nutrient deficient soils.

3—Highest soybean yields are generally obtained when the phosphorus and potassium needs have been satisfied, but yield decreases can be obtained if either phosphorus or potassium is supplied in large excess, relative to the supply of the other nutrient.

4—Fertilizer or manure treatments applied directly or indirectly (residual) are reflected in the chemical composition of the soybean plants.

5—The chemical composition of the upper leaves and leaf petioles sampled at the end of the flowering period appear to show the best relationship with soybean yields.

Although factors other than fertility also have a large effect on the yield of soybeans, they were not studied in these experiments. Further work of a more extensive nature will undoubtedly result in better precision in predicting soybean yields and yield responses to added fertilizers.

### Corn and Soybeans

An investigation was conducted on a potassium deficient soil to study the relative yield responses of corn and soybeans to various rates of potassium fertilizer when grown under the same environmental conditions. The experiment was designed so that one-half of each plot was planted to corn and the other half to soybeans. The $K_2O$ rates used ranged from 0 to 350 pounds per acre in 50-pound increments and were broadcast and disked in just prior to planting.

TABLE 5. THE EFFECTS OF PHOSPHORUS AND POTASSIUM FERTILIZERS ON THE YIELD OF SOYBEANS AT FOUR LOCATIONS IN 1958

| Treatment number | Fertilizer treatment in pounds per acre | | Average yield in bushels per acre at 13% $H_2O$ | | | |
|---|---|---|---|---|---|---|
| | | | Expt. | Expt. | Expt. | Expt. |
| | $P_2O_5$ | $K_2O$ | 1 | 2 | 3 | 4 |
| 1 | 0 | 0 | 16.4 | 26.0 | 15.6 | 23.1 |
| 2 | 64 | 0 | 5.3 | 26.2 | 20.3 | 27.0 |
| 3 | 0 | 64 | 23.2 | 25.5 | 18.8 | 24.4 |
| 4 | 64 | 64 | 23.0 | 25.4 | 19.3 | 28.3 |
| 5 | 196 | 4 | 7.9 | 26.7 | 21.6 | 26.9 |
| 6 | 4 | 196 | 28.8 | 26.0 | 17.7 | 26.6 |
| 7 | 196 | 196 | 35.3 | 30.7 | 17.4 | 28.6 |

The results of this experiment indicated that the maximum yields of corn and soybeans were obtained when 278 and 210 pounds of $K_2O$, respectively, were used. The average soybean yields ranged from 35.6 to 39.5 bushels per acre, while the average corn yields ranged from 87.5 to 105.3 bushels per acre. The corn/soybean yield ratios calculated at each $K_2O$ level indicated that the corn made more efficient use of the $K_2O$ applied than did the soybeans in this experiment.

### Composition of Plants

The chemical composition of plants or plant parts sampled at specific stages of growth has been used to estimate the sufficiency or deficiency of several essential nutrients in crops and has been related to be the final crop yields. In the Cornbelt, a considerable amount of research has been conducted in order to determine the chemical composition and yield relationships in corn, whereas, very little work of this type has been conducted with soybeans. Since more information about nutrient uptake and translocation in soybean plants was needed, work was initiated to investigate the relationship between chemical composition and soybean yield.

The soybean plants in the potassium rate study reported above were sampled during the growing season for subsequent chemical analyses. Points of interest in this study were (1) potassium content of soybean plant parts, (2) the change in potassium content in the plants with

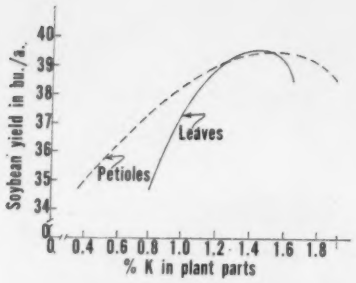



**Figure 1. Relationship between soybean yield and potassium in plant parts sampled shortly after flowering had ceased.**

lime, and (3) the relationship between yield and the potassium content of plants or plant parts. The chemical analyses showed the potassium content of various soybean plant parts differed greatly although they all increased with larger $K_2O$ applications. Both the leaf petioles and the leaves showed wide ranges in potassium content among treatments, and the potassium content of each decreased as the plants neared maturity. The decrease in potassium content with lime, however, was less for the leaves than for petioles. As the potassium content of the plant parts increased due to treatment, the yields also increased to a maximum point, above which yields decreased as the potassium content continued to increase. See figure 1.

In 1958, four soybean fertility experiments were conducted on phosphorus- and potassium-deficient soils in Iowa. Twenty-two different combinations of phosphorus and potassium were used as treatments at each location.

The effects of phosphorus and potassium fertilizers on soybean yields varied greatly in these four experiments as shown in table 5. The adverse effects that high rates of phosphorus fertilizer can have on soybean yields when potassium is inadequate for normal growth are shown by treatments 2 and 5 in experiment 1. Experiments 1, 3 and 4 showed yield responses for applications of phosphorus with potassium and for potassium alone. Experiment 2 showed little yield responses except for the high rate of phosphorus and potassium together. Only experiments 3 and 4 showed any yield responses for applications of phosphorus with little or no added potassium.

Plant samples were taken at four different growth stages from the individual plots to help determine the best time and plant part to sample in the future to assess nutrient status of the soybean plants. Except for the first sampling in which the plants were quite small, all whole plants were separated into various plant parts and chemically analyzed for total phosphorus and potassium content. All yield and chemical data from each experiment were combined for statistical analyses and yield equations were determined. Given these yield equations the degree of relationship between soybean yields and chemical composition of any particular soybean plant part could be estimated.

On examination of the resulting combined data from the experiments, it appeared that the chemical composition of the upper leaves and upper leaf petioles sampled at the end of the flowering period showed the best relationship with soybean yields. However, unless further investigations indicate otherwise, the upper leaves probably would be the most practical plant part of the two to use in soybean yield-chemical composition relationship studies.

Leaf samples were collected from eight short term and three permanent soybean fertilizer experiments and chemically analyzed for phosphorus and potassium content. In some of these experiments the fertilizers were applied directly to the soybeans while in others they were applied the previous year or to the rotation in which the soybeans were grown. Study is continuing on the relationships between yield and chemical composition of these leaf samples and the results should help extend the other information reported.

## Soybeans Show Zinc Starvation in Nebr.

SOYBEANS ARE among the crops which will show zinc starvation, says M. D. Weldon and Leon Chesnin, agronomists at the Nebraska Agricultural Experiment Station.

Zinc deficiencies show up as a light brownish-yellow color on the older leaves. But, at some stages of growth, even new leaves may turn a light tan color. Also, some leaves may show small smudges of rust-red color.

Symptoms are more severe in cold, wet weather. A period of 2 or 3 weeks of warm sunny weather may bring about a rapid recovery, with new leaves regaining their normal dark-green color. The chlorotic leaves, however, remain yellow. With a severe deficiency of zinc, the crop may not recover completely, and a yield reduction can be expected.

## 10-Bushel Response to Potash Application

A JULY application of 60 pounds of potash per acre increased soybean yields 10 bushels per acre in 1959 for a Lawrence County, Ark., farmer, according to Delta Farm Press.

Charles Barnhill noted distinct signs of potash deficiency on his beans and added the potash on July 2 when the beans were about 3 feet tall.

Mr. Barnhill realized that crop response to potash at that late date depended largely on the weather. Potash becomes available to plants very quickly if moisture is available. He had good luck in that it rained July 5.

Actual yields taken Sept. 24 were 13.7 bushels per acre where no potash was applied and 23.7 bushels on the fertilized part.

The field had grown soybeans for 7 consecutive years with no fertilizer.

## Show No Response In Arkansas Tests

SOYBEANS have not responded to fertilizer in 13 out of 16 tests conducted by the University of Arkansas Eastern Arkansas Branch soil testing and research laboratory, the researchmen say.

The experiments included combinations of nitrogen, phosphate, and potash.

Soybeans did respond to fertilizer in three tests on loessial terrace soils of very low fertility. There was no response to trace elements at any of five locations where they were included.

Generally speaking, fertilizer did not increase soybean yields significantly on soils of medium and high fertility, according to Richard Maples and J. L. Keogh of the Arkansas Experiment Station staff.

## Texas Tests on Clay Loam Are Negative

THREE YEARS' tests by the High Plains Research Foundation at Plainview, Tex., do not indicate that fertilizer is of value on soybeans grown cn Pullman clay loam, report D. R. Langford and T. C. Longnecker.

In the 1959 tests nitrogen, phosphate, and potash were applied to soybeans alone and in combination with each of the other two fertilizers.

**Soybean research in southeast Kansas indicates:**

# Raising the Fertility Level Increases Soybean Yields

By VERLIN H. PETERSON
Columbus-Thayer Experiment Field
Kansas State University

SOYBEAN PRODUCTION has become a stimulating factor in the economy of east central and southeast Kansas. Statistics reveal that in 1959 the farm value of soybeans for all counties contained therein was over $14½ million. In addition, the 10 leading counties of the state were found in these two areas.

Kansas State University recognized the potential importance of soybeans in this area as far back as 1924. At that time this crop was incorporated into variety trials at its Southeastern Experiment Field located at Columbus, Kans. Rotation-fertility trials commenced in 1931.

### Less Direct Response

Several interesting facts have been established from this latter research project which has been continued in essentially the same manner up to the present time. For the average of the past 30 years it has been found that soybeans have responded less to the various fertility treatments than any other crop in the rotation. If, however, 5-year averages are examined, we found that as the experiment progressed the yield response increased for treatments which included manure or potash. In 1960 an additional 12 bushels per acre were harvested from the plot receiving the manure treatment.

Evidence from this experiment, therefore, suggests that a farmer should give serious consideration to improving the fertility level of his soil as a means of increasing soybean yields. To do this he must use adequate fertilizer with each crop in a good rotation system.

In 1960 a fertilizer placement study on soybeans was established on a low fertility soil near the Columbus Experiment Field. In this experiment, soybean yields were increased only by potash fertilizer applied either as a plow-down or band application made to the side of the seed. Broadcasting fertilizer on a prepared seedbed immediately before planting resulted in reduced yields because of stimulated weed growth that could not be controlled successfully by cultivation. This was especially evident as the nitrogen rates were increased. It is essential, therefore, to work broadcast fertilizers into the soil in order to minimize the weed hazard.

A new experiment at the Columbus Field in 1960 involved fertilizer usage on soybeans that were planted in varying row widths. Fertilizer response was negligible in this experiment. However, the best yields in 14- and 21-inch rows were harvested on plots receiving potash. In row spacing of 35 to 42 inches, a combination of both phosphorus and potash was necessary for maximum production.

### Other Experiments

Research on row spacing and rate of seeding has continued at the Columbus Experiment Field since 1955. For this period of time, we found that 21-inch rows yielded 3 bushels per acre more than 42-inch rows where optimum seeding rates of 75 and 45 pounds per acre, respectively, were employed.

A date-of-seeding experiment on soybeans was established at Columbus in 1960. Seeding began the middle of April and continued at 2-week intervals to July 15. Definite conclusions should not be made on the basis of results for just 1 year; however, in 1960 the highest yields were harvested from the two earliest dates of planting. Soybeans planted the first and middle of July were short in height and yielded poorly.

In addition to the experiments previously discussed, an extensive variety testing program is being pursued at the Columbus Field. A Kansas variety test includes promising varieties compared with those already recommended. In cooperation with the U. S. Regional Soybean Laboratory of Urbana, Ill., a nursery plot consisting of experimental varieties is also established each year.

With acreage restrictions on wheat it has been necessary for our farmers to shift their operations to other enterprises. Soybean research in southeast Kansas will continue, therefore, to be of prime importance since the economic welfare of many will depend on soybean production.

## Two New Varieties By Hale Seed Farms

HALE SEED FARMS, Burdette, Ark., is releasing two new high yielding disease- and shatter-resistant soybean varieties for trial plantings, G. A. Hale reports. Hale 3 and Hale 7 mature about the same time as Hood and Ogden, and both have good seedling vigor, grow taller, fruit farther from the ground and have less combine losses than other commercial varieties of medium maturity, says Mr. Hale.

Hale 3 is widely adapted and recommended for good, fertile, sandy and silt loam soils where it stands erect and produces a good yield and ground cover. Hale 7 is well adapted to and recommended only for heavy, gumbo, buckshot and clay soils where it stands erect and produces good yields and an excellent ground cover.

Hale 3 has been under test at both the Missouri and Arkansas experiment stations for the past 2 years.

## Narrow Soybean Rows Increase Minn. Yields

NARROW soybean rows have increased yields in field trials at the University's Southern Experiment Station at Waseca, according to Minnesota Farm & Home Science. Here soybeans in rows 24 inches apart yielded up to 6 or 7 bushels more per acre than beans in 42-inch rows. The greater yields are due to higher number of plants per acre.

The studies also show that the best seeding rate in narrow rows is 100-110 pounds per acre. The early maturing soybeans, in these tests, had most of the advantage. In late varieties the advantage was less.

# THE NEWS IN BRIEF

## THE CROP, MARKETS AND OTHER ITEMS OF NOTE

**Support Price on Soybeans**

A warning that the proposed $2.30-per-bushel support price on 1961-crop soybeans will probably create burdensome surpluses by upsetting next year's markets and making it impossible to sell U. S. soybeans abroad was conveyed to the U. S. Department of Agriculture by the executive committee of the American Soybean Association in late February.

President Kennedy in his farm message to Congress proposed raising the support price on 1961-crop corn from $1.06 to $1.20 a bushel and the support price on soybeans from $1.85 to $2.30 per bushel in order to *divert feed grain acreage into soybeans.* The support price on soybeans had not actually been set at $2.30 when the Digest went to press but there were many Washington reports that it was the firm intent of the Administration to do so. ASA officials were to meet with James Ralph, assistant secretary for agricultural stabilization, on Feb. 28, when the support level on 1961-crop soybeans was to be discussed.

ASA President Charles Simpson pointed out in a news release issued Feb. 18: "Present selling prices of soybeans will easily bring the increase in soybean acreage needed in 1961, and **we actually do need about 2½ million acres more beans than in 1960,** in order to supply the expanding export markets which have been created by the efforts of our Association and the Soybean Council, along with the needs of the expanding livestock population at home."

Our reports indicate a general feeling in the trade that the *present soybean market will generate all the acreage that can possibly be used in 1961,* with possibly a massive shift into soybeans that could upset next year's markets. A $2.30 price support would only complicate problems. Most say a support level of $2 to $2.20 would be acceptable. (For further information see Geo. M. Strayer's editorials on page 4, and Washington Digest on page 32.)

**Washington Dinner for Congress**

Members of the U. S. House of Representatives and the Senate got a firsthand progress report on overseas agricultural marketing programs at a Congressional dinner held at the Mayflower Hotel in Washington Feb. 28. Sponsoring the dinner were the Amercian Soybean Association, the Soybean Council of America, the Great Plains Wheat Association, U. S. Feed Grains Council, Burley and Dark Tobacco Export Association, Leaf Tobacco Exporters Association, Institute of American Poultry Industries, Cotton Council International, Millers' National Federation, Tobacco Associates, Inc., and Western Wheat Associates.

The marketing programs of these associations are carried on under P.L. 480 and administered by the Foreign Agricultural Service of the U. S. Department of Agriculture.

**As USDA Sees Price Outlook**

U. S. Department of Agriculture noted that the average $2.70-per-bushel Chicago prices for soybeans in mid-February was 55¢ above a year ago. Stated USDA: "While most of the seasonal rise probably has occurred, *prices should remain relatively firm throughout spring,* averaging well above last year.

"The soybean price strength during the current marketing year mainly reflects strong export and crusher demand for the reduced supply of beans this year. Carryover stocks of soybeans next Oct. 1 are expected to be at the lowest level since 1956.

"Soybean and cottonseed oil prices are expected to rise further during the remainder of the 1960-61 marketing year. The optimistic outlook for edible oil prices stems from a new high in domestic consumption and record

exports stimulated in part by record shipments under government-financed programs and donations to needy abroad.

"High protein feed prices are expected to show more strength this spring and summer than in 1960 when they declined 12% from January to July."

**Oils for Relief Feeding**

The U. S. Department of Agriculture early in February announced its intention to make available up to 100 million pounds of soybean, cottonseed or peanut oils for overseas relief feeding through voluntary agencies as part of the Food for Peace program. The American Soybean Association had advocated such a step for some time.

Later USDA announced that Commodity Credit Corp. had purchased 8.5 million pounds of vegetable oil shortening and 4 million pounds of cottonseed salad oil for donation to relief feeding agencies under the program.

**February Export Business**

The Spanish government purchased 10 million pounds of U. S. soybean oil, all for dollars, in late February, shipments to start in March. Earlier, International Cooperation Administration announced the authorization under ICA to Spain for U. S. soybean oil had been reduced from 112,000 metric tons to 20,000 metric tons, and the dollar value from $28.5 million to $5.5 million. Contracting period was extended from Mar. 31 to May 31, and the terminal delivery date from May 31 to July 31.

ICA was reported to have issued the following purchase authorizations to Formosa for U. S. soybeans: $1,830,000 for 17,500 metric tons with a terminal contracting date of Apr. 30 and delivery June 30; $4,800,000 for 45,000 metric tons to be contracted between Mar. 31 and Oct. 31, delivery by Nov. 30; $5,600,000 for 52,500 metric tons, to be contracted for by Nov. 30, and deliveries between Aug. 31 and Dec. 31; $1,450,000 for 12,000 metric tons to be contracted for by Nov. 30, deliveries between Aug. 31 and Dec. 31.

**Seed Germination Is Good**

*Germination tests on 1960-crop soybean seed are generally running very good,* apparently due to a favorable harvesting season with low damage to harvested seed, according to our reports. Some lots of seed have been placed on the commercial market, however. Iowa State University agronomist Harvey Thompson is quoted as saying supplies of seed may be short.

An exception to the good germination reports is parts of Arkansas. Jake Hartz, Jr., Stuttgart, Ark., reports approximately 40% of the seed in his area is running below 80% germination, and that in all probability some certification standards will have to be lowered to meet the demand.

**Soybean Checkoff In Iowa**

A general enabling act that would permit a checkoff on soybeans as well as other commodities in Iowa has been reported favorably by the House agriculture committee in the legislature. H.R. 376 provides that any bonafide agricultural commodity group can petition the state secretary of agriculture for a checkoff on its commodity at the point of first handling, the *proceeds to be used in market expansion work.*

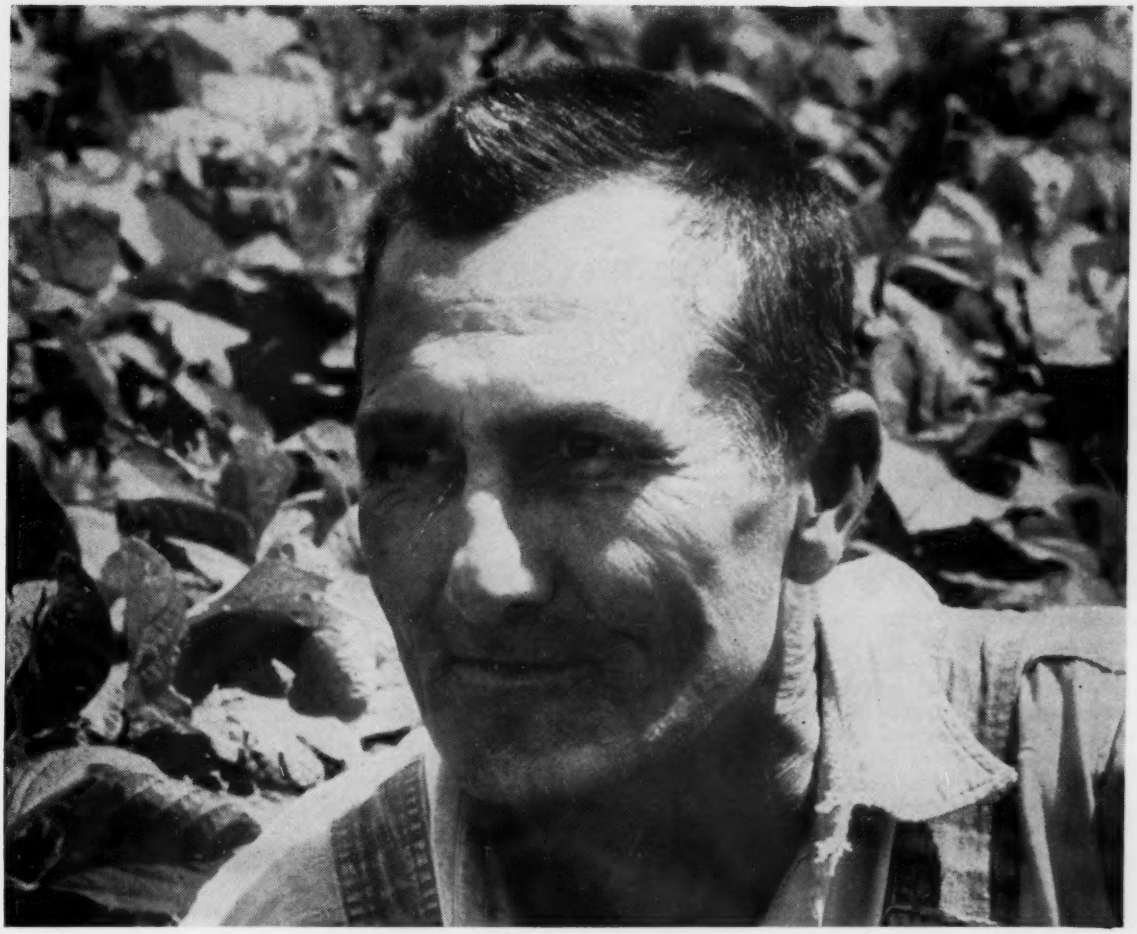
The American Soybean Association and also the Farmers Grain Dealers Association of Iowa are supporting the bill.

**Reorganize USDA Economics**

Secretary of Agriculture Orville L. Freeman has announced a reorganization of the agricultural economics services in the U. S. Department of Agriculture, with a new director of agricultural economics heading a grouping of both research and statistical reporting services in agricultural economics. Presently the economic functions and activities are scattered in Agricultural Marketing Service, Agricultural Research Service, and Foreign Agricultural Service. Dr. Willard Cochrane, University of Minnesota agricultural economist, has been appointed director.

**Ask More Research Funds**

The American Soybean Association is asking Congress to appropriate *an additional $385,000 for basic soybean research,* which would almost double present research funds. The funds would be divided as follows: weed control $100,000; soybean breeding $110,000; physiology $75,000; and nodulation $100,000. All funds would go to USDA's Agricultural Research Service.



# "I FIGURE ANYWHERE FROM 2 TO 5 BUSHELS MORE BEANS AN ACRE...

. . . in the field planted with ORTHO-treated seed. The plants in that field had a better color, and were 3 to 4 inches higher within a few weeks after emergence. I'm sure going to treat *all* my beans with ORTHO Soybean Seed Protectant next year." Grower Edwin J. Lurker of Mt. Vernon, Black Township, Posey County, Indiana, knows what he's talking about. He treated a 10-acre field with ORTHO Soybean Seed Protectant, and even though emergence was delayed by wet and cold weather, he got a full stand. **ORTHO Soybean Seed Protectant** contains ORTHOCIDE (captan) to protect seed from blight, damping off and decay. It coats the seed and gives added protection in the surrounding soil. A built-in lubricant aids seed-flow, prevents cracking or splitting of seed, insures uniform planting. Mix it right in the planter box with the seed. **The 1 lb. can costs $1.25, treats seed to plant about 4 acres.**

Mr. Lurker with ORTHO Fieldman Milt Young in ORTHO-treated soybean field.

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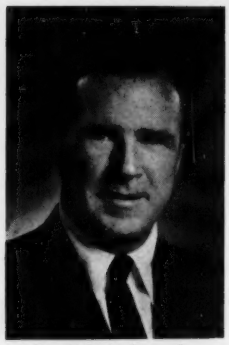
*From out of the Past . . .* **SAFFLOWER**

# An Oilseed Crop with A Great Future



Sewall D. Andrews, Jr.

**By SEWALL D. ANDREWS, JR.**
**Vice President, General Mills, Inc., and General Manager, Oilseeds Division, Minneapolis, Minn.**
**Reprinted from Chemurgic Digest**

CENTURIES ago the Middle East knew about safflower—used its yellow and orange florets in extracting the rouge dye carthamin, an admixture of the cosmetic and textile dye saffron other dyestuffs have replaced saffron, but today modern research for new uses for agricultural products in industry has opened the doors to an exciting, star-spangled future for the safflower seed as a profitable oilseed crop.

Since 1925 several western agricultural experiment stations have tested safflower as a field crop. Safflower was grown commercially in 1950 and since 1956 has been established as a profitable crop in the central valley of California. Seed production in the Great Plains states has increased substantially, supported by a processing plant in Sidney, Nebr., and another plant under construction at Culbertson, Mont.

Safflower, a thistlelike herb, grows to an erect height of 1½ to 5 feet. Common varieties have composite heads with yellow or orange flowers and green bracts. Each central stem produces from one to five of these flower heads and each head contains 40 to 100 florets. At maturity, a floret bears one white seed similar in appearance to a sunflower seed and a little larger than a barley kernel. Safflower seed is harvested by combines after a growth season of about 120 days.

**SAFFLOWER seed natural size.**

**SAFFLOWER SEED PRODUCTION IN U. S.**

| Crop year beginning Aug. 1 | Production of seed—millions of pounds | | |
|---|---|---|---|
| | California | Other states | Total |
| 1950 | 14.0 | 20.0 | 34.0 |
| 1951 | 15.0 | 5.0 | 20.0 |
| 1952 | 47.0 | 5.0 | 52.0 |
| 1953 | 52.0 | 4.0 | 56.0 |
| 1954 | 29.1 | .... | 29.1 |
| 1955 | 72.3 | 5.0 | 77.3 |
| 1956 | 141.9 | 3.1 | 145.0 |
| 1957 | 114.0 | 13.4 | 127.4 |
| 1958 | 107.2 | 39.6 | 146.8 |
| 1959 (Est.) | 215.6 | 35.7 | 251.3 |

Source: Pacific Vegetable Oil Corp. and trade estimates.

**SAFFLOWER plant showing leaves, branching habit, and flower heads.**

Safflower may be grown in semi-arid regions or on irrigated land. Maximum yields require soil moisture equivalent to 25 inches of rainfall a year. Varieties have been developed for varying soil and moisture conditions and work continues in an effort to improve yields, oil content and disease resistance. Present crops in California yield an average of 1,700 pounds of safflower seed per acre with yields in the Great Plains states ranging from 700 to 1,200 pounds per acre. Considerable improvement in seed yields is anticipated with estimates up to 4,000 pounds per acre under ideal conditions and better harvesting techniques. Oil yields have improved progressively from 27%-28% prior to 1942 to 34%-37% on seed from the 1958 California crop. As new plant varieties are developed, it is anticipated that oil yields of 40% may be possible.

## Processing

Safflower seed may be processed with standard oil mill equipment using expeller or solvent extraction methods. The seed is cleaned, cracked, cooked, and conditioned before expression or extraction of the oil. The oil-free cake is ground into meal principally for livestock feed and the oil is refined by conventional methods similar to other vegetable oils.

## Safflower Oil

The relatively simple composition of safflower oil provides the key to its present utilization and to exciting, large volume opportunities for both technical and edible uses in the near future. Typical fatty acid structure is 75% linoleic, 17% oleic, and 8% saturated fatty acids. Some analytical reports indicate traces of triply unsaturated linolenic acid, but the amount is insignificant for all practical purposes.

The average iodine value of safflower oil is about 145, substantially higher than soybean oil in the 130 range. This high iodine value and the low saturated fatty acids, combined with the high linoleic content, contribute to superior drying properties, absence of after yellowing on exposure, and uniform polymer structure giving optimum film flexibility. Safflower oil is initially light in color and heat bleaches even lighter to produce top quality white coatings.

The big use of safflower oil in protective coatings today is in the production of superior alkyd resins. Alcoholysis is accomplished with

**HARVESTING safflower with a combine.**

greater ease and speed than with either soybean or linseed oils. Although Non-Break is the most versatile and widely used type of safflower oil produced for technical applications, the oil may be alkali refined, kettle bodied, conjugated, or otherwise treated to provide a most interesting series of oils suitable for many industrial uses.

Although a high percentage of the safflower oil now produced goes into surface coatings, the edible oil markets appear to offer a great potential for future development. Edible safflower oil has a delightful flavor and makes an excellent mayonnaise, salad and cooking oil. It emulsifies readily and remains liquid at low temperatures, performs exceptionally well as a liquid shortening for baking purposes. Combined with low fat dairy products, it yields nutritious foods. Its high polyunsaturated fatty acid content per calorie makes it an ideal dietary and pharmaceutical ingredient.

Edible safflower oil is the outstanding source of linoleic acid and contains more polyunsaturated fatty acids than other commercially available vegetable oils.

It offers the lowest number of calories with highest essential fatty acids content per unit of oil of any commercial grade of edible animal or vegetable fat. There is clinical evidence that replacement of saturated fats in the diet by unsaturated fats is of value in prevention of coronary and arterial diseases. The association of high cholesterol blood levels and athereosclerosis has been demonstrated in numerous studies. Safflower oil with about 50% more linoleic acid than other commercially available vegetable fats compares most favorably where dietary effects of saturated and unsaturated fats may be critical.

### Safflower Meal

Safflower meal, as presently produced, is a medium protein feed suitable for ruminants. It contains 18% to 21% protein and 34% to 37% fiber. Progress has been reported in efforts to decorticate the seed to improve safflower meal quality. If this work is successful, a higher grade meal with an average 40% protein will be produced which will be suitable for use in poultry and hog feeds. At this time safflower meal can be used successfully in feeds for beef and dairy cattle as a source of protein. Although the total digestible nutrients (TDN) are relatively low, results obtained with dairy cows indicate the meal has nutritive value over and above the TDN value.

**TYPICAL CHARACTERISTICS OF VEGETABLE OILS**

| | Safflower | Corn | Soybean | Cottonseed | Peanut | Olive |
|---|---|---|---|---|---|---|
| Iodine value | 145 | 125 | 130 | 107 | 92 | 85 |
| Saponification value | 192 | 189 | 192 | 194 | 191 | 192 |
| Unsaponifiable matter (%) | 0.6 | 2.0 | 0.9 | 0.6 | 0.5 | 0.9 |
| Refractive index at 25° C | 1.473 | 1.472 | 1.473 | 1.470 | 1.468 | 1.467 |
| Specific gravity 25/25 | 0.923 | 0.919 | 0.919 | 0.917 | 0.913 | 0.912 |
| Fatty acid composition:* | | | | | | |
| Saturated | 8 | 14 | 16 | 27 | 20 | 12 |
| Oleic | 17 | 32 | 27 | 25 | 55 | 83 |
| Linoleic | 75 | 53 | 50 | 48 | 25 | 5 |
| Linolenic | .... | 1 | 7 | .... | .... | .... |
| Grams of oil to give 100 grams linoleic acid | 133 | 189 | 200 | 208 | 400 | 2000 |
| Calories in oil sufficient to give 10 grams linoleic acid | 120 | 170 | 180 | 187 | 360 | 1800 |

* Expressed as percent of total fatty acids. Source: Bailey's "Commercial Fats and Oils" and General Mills, Inc. central research laboratories, Minneapolis, Minn.

## Manganese a Minor but Necessary Element

MANGANESE IS a minor element that is necessary for efficient crop production. The most sensitive crops appear to be soybeans and oats, and soybeans are more sensitive than oats, according to the University of Illinois.

Manganese helps to form chlorophyll, which gives plants their green color. Therefore, manganese-deficient plants cannot manufacture adequate chlorophyll, and the leaves develop light-colored areas between veins. The veins remain green until chlorosis approaches the "white stage" and the leaves fall from the plant. The symptoms appear first on the youngest leaves. Analysis of plant tissue indicates that normal plants usually contain 20 to 45 parts per million of manganese, while the deficient ones contain as little as 3 to 5 parts per million.

Since there is no good chemical method for measuring manganese in soil test laboratories, plant symptoms and leaf anaylsis must be relied on to detect manganese deficiencies.

When the manganese supply in soils is at critical levels, deficiency symptoms may develop during cool weather, since temperature affects the amount of manganese that plants can use. Alkaline, poorly-aerated, wet soils are apt to be low in manganese. They may also fix large amounts of the nutrient. Therefore, applying manganese fertilizers broadcast and mixing them well with the soil is likely to do little good.

When manganese deficiency symptoms develop, spraying the plants with manganese sulphate has been most successful in correcting the deficiency in Illinois. Ten pounds in 25 gallons of water per acre is a suitable rate. Indiana also recommends applying 25 to 30 pounds of manganese sulphate per acre in the row at planting time. The cost is approximately $3 per acre.

## Coconut Vegetable Oil On Sale in Philippines

"EL REAL," a vegetable oil extracted directly from fresh coconuts, is now on sale in the Philippine market, according to a press report from that country. The exclusive process, which was started 10 years ago, is now patented in the Philippines, the United States, Great Britain, France, and 10 other countries.

# Urge Basic Studies on Varieties

BASIC STUDIES on breeding improved soybean varieties and on the physiology of peanuts are high priority needs, along with accelerating the agronomic evaluation of new oilseed crops, the U. S. Department of Agriculture's oilseeds and peanut research and marketing advisory committee said at its annual meeting held this year at Albany, Calif., Jan. 23-26.

New information on the chemical and physical properties of vegetable oils is the top need in the area of research to expand use of oilseeds, the committee said. Such studies would result in improved formulation and processing of the oils for industrial use as well as food consumption.

Other important utilization research needs cited by the committee include (1) development of improved flavor stability in soybean oil, and (2) improvement in the feeding value of oilseed meals and protein concentrates used in mixed feeds.

High priority needs in the area of marketing research were noted by the committee as follows: (1) new consumer preference studies to determine patterns of use in oilseed and peanut products, (2) research to develop new market outlets for oilseed products, and (3) development of improved methods of measuring the market quality of peanuts and soybeans.

The committee also said high priority should be given to continuing and expanding research on the nutritional and health aspects of fat in the human diet. The role of fats in diets continues to be a major problem in the nutrition and health of Americans.

Established under the Research and Marketing Act of 1946, the committee is composed of national authorities on oilseeds and peanuts. Its detailed recommendations for oilseed and peanut research in which the USDA should participate will be submitted to the USDA within the next few weeks.

Committee members include John W. Evans, Montevideo, Minn., and Jake Hartz, Jr., Stuttgart, Ark., American Soybean Association directors; Robert L. Terrill, Spencer Kellogg & Sons, Inc., Buffalo, N. Y.; John B. Brown, Ohio State University, Columbus; and A. C. Hoehne, Cecil Bays & Co., Arcadia, Calif.

Mr. Hartz, who is secretary-treasurer of Jacob Hartz Seed Co., Stuttgart, Ark., is a new member of the committee this year.



## Cargill Towboat

—Photo courtesy Arkansas Democrat

**GIANT TOWBOAT Austen S. Cargill was recently christened and put in service at Market Street dock in St. Louis. The 6,630 horsepower vessel, built for Cargo Carriers, Inc., by St. Louis Shipbuilding and Steel Corp., is one of the most powerful on the inland waterways, able to push barge tows longer than the Queen Elizabeth. Here, tied next to shipyard workboats and barges, finishing touches are completed before placing into service.**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(Photo courtesy University of Missouri.)

**SCIENTIST GROWS "Hot" Barley. University of Missouri soils researcher V. E. Renner checks radioactivity of phosphorus grown into barley in the first step of an experiment to learn how much better soybeans can use plant food carried in organic matter than that in mineral fertilizer.**

# "Hot" Barley Used as Soybean Check

CAN SOYBEANS make better use of plant food in green manure than that in mineral fertilizers?

Soils researchers at the University of Missouri hope to find out with an experiment now under way.

Several factors indicate soybeans may take up plant food more readily from organic matter than from mineral fertilizer. First, soybeans have not been consistent in their response to direct fertilizer applications. Second, it appears to be more important to do a good job of fertilizing the crops ahead of soybeans and to build up the general fertility level of the soil than to fertilize the soybeans themselves. And third, preliminary laboratory tests at the University showed soybean plants took up phosphorus more readily from organic matter than from mineral material.

V. E. Renner, instructor in soils, working in cooperation with Professor E. R. Graham, is in the first step of a similar experiment on a bigger scale. This experiment involves growing radioactive barley. The barley plants, being grown in a laboratory, are fed a nutrient solution "spiked" with radioactive phosphorus.

This is phosphorus that has been made radioactive in an atomic pile. Plants use it the same as other phosphorus but the radioactive "taillight" makes it possible for researchers to follow the phosphorus as it is absorbed in plant growth. When plants get about 12 inches tall, Renner will harvest the green tops, dry them, grind them up, and measure the amount of radioactive phosphorus in them.

Next step will be to mix this barley residue into soils on which soybeans will be grown. These soils will also contain varying amounts of available phosphorus according to soil tests.

After the soybeans have grown for 60 days, the University researcher will harvest the soybean plants and check them for the amount of radioactive phosphorus taken up from the barley residue. This amount can be compared with that taken up from the mineral phosphorus in the soil.

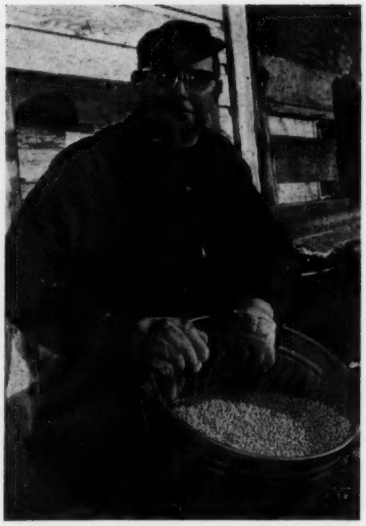
In the preliminary test, soybeans had taken up 16.7% of the radioactive phosphorus in the barley residue mixed with the soil by 60 days after planting. In the same period, they had taken up about 16.5% of the available mineral phosphorus as indicated by soil test.

The important point in this comparison is that the total mass of the soil was 500 times that of the organic matter mixed with it. Renner says this poses the question, "Is the delivery of phosphorus from the organic material 500 times as effective as that from the mineral phosphorus in the soil?"

In their longtime plans, the soils researchers will make field tests comparing soybeans grown continuously with those grown in rotation with a barley green manure crop.

The Missouri researchers selected barley for the green manure crop because in many cases, yields of soybeans grown after barley used for livestock pasture have been better than where soybeans have been grown continuously or after corn. The barley plant is a heavy feeder on mineral nutrients in the soil. Perhaps it incorporates these nutrients into organic combinations which make the plant food more readily available to the following soybean crop.

If using barley as a green manure crop prior to planting soybeans proves to be a good management practice, the resulting increases in seed yield could help improve Missouri farm income. Even a small increase in average yields would be significant on this crop, which has become a $100 million cash crop in Missouri.



**Fred Hutchcroft, Jr.**

## Hutchcroft Winner of Iowa Yield Contest

FRED HUTCHCROFT, JR., Indianola, was named the Iowa master soybean grower for the 1960 season at the Iowa Crop Improvement Day at Ames. He got a yield of 50.91 bushels per acre on a 2-acre tract selected from a 41-acre field.

The Iowa master contour corn grower award went to M. E. Dillon of Keota, who last year won both the master corn grower and soybean grower awards.

Mr. Hutchcroft won the John Sand Trophy and a watch from the Iowa soybean processors. His entry was sponsored by the Laverty Elevator, Inc., Indianola.

Hutchcroft's bean field had been in corn in 1959 and meadow in 1958. He plowed it in the spring, double disked and harrowed, and planted June 2 with Clark soybeans at the rate of 75 pounds per acre in 40-inch rows. He rotary hoed the field twice, cultivated twice and hand weeded.

Second place in the soybean contest went to John Robert Kurtz of South English. His yield was 49.27 bushels per acre. His entry was sponsored by the Keota Community Club, and he received the Iowa Soya Co. silver plaque and a watch presented by the Iowa soybean processors.

Third place in the soybean contest was won by Richard Stone of Indianola. He produced 47.46 bushels per acre. His sponsor was the Laverty Elevator at Indianola. He received the Iowa cooperative soybean processors plaque and a watch from the Iowa soybean processors.

Sudler J. Wilson

## Sudler Wilson Was 1960 Delaware Soybean King

SUDLER J. WILSON, Georgetown, was the 1960 soybean king in Delaware, Frank B. Springer, assistant agronomist at the University of Delaware, reports. His yield was 51 bushels per acre.

Mr. Wilson was the only one of the 53 Delaware growers, who made the 40-bushel club last year, to grow the Perry variety. He planted his seed on June 10 in 32-inch rows on land following corn with a ryegrass cover. He did not use any fertilizer.

Twilley Bros., Delmar, were in second place with a 50.1-bushel yield. They grew the Hood variety, which they planted June 10 in 34-inch rows following corn with a ryegrass cover. They used no fertilizer.

Third place winners were T. S. Smith & Sons, Bridgeville, with a 48.2-bushel yield. They planted Clark in 32-inch rows June 28 following barley.

Six of the top 10 producers used fertilizer and six grew the Clark variety. In fact, Clark was the outstanding favorite with the 53 Delaware growers who produced 40 bushels per acre or more in 1960. Sixteen producers grew Clark. Nine producers grew Hood, and the same number grew Ogden; five grew Hill, and three grew Wabash. Several other varieties were grown by one or two contestants.

## Focal Point of Texas Soybean Research

THE HIGH PLAINS Research Foundation, Halfway, Tex., has become a focal point of soybean research in Texas and the Southwest.

This came about recently when Paymaster Farm, a subsidiary of Anderson-Clayton, turned over its entire soybean research program and data, and $1,000 to the Foundation. This makes the Foundation the only soybean breeding facility in the state, except for Texas A & M College at Lubbock.

Earl Collister, of the Foundation, will head the breeding program. The Foundation now has 454 experimental strains for its breeding program. Of that number, 322 were turned over by Paymaster Farm. The remainder came from Asia, Africa, and South America.

Dr. Collister, a seed oil specialist, said they will be looking for higher yield, taller stalks for combining, earlier maturity, lodging resistance, non-shattering, disease and insect resistance and chemical content.

Other soybean research is being carried on by R. D. Staten of USDA's Agricultural Research Service at Lubbock.

The Lee and Hill varieties are adapted to the High Plains.

**AT THE RECENT public relations seminar in Tokyo: left to right, front of table: W. Kawamura, director and public relations chief, Miso Association; J. Sasaki, vice president, Miso Association; K. Kataoka, president, Tatsuno Shoyu, Hyogo Prefecture; B. Shoda, president, Shoyu Association; S. Toriumi, advisor, Shoyu Association. Left to right, back of table: S. Toyazaki, managing director, Frozen Tofu Association; T. Tsukada, president, Frozen Tofu Association; S. Masuko, president, Masuko Miso, Tochigi Prefecture; S. Kawahara, managing director, Miso Association; K. Tanaka, vice president, Miso Association; T. Tanaka, president, Miso Association; Y. Umeda, director, Shoya Association; and A. Komiya, managing director, Shoyu Association.**

# Public Relations Seminar by JASI


**By SHIZUKA HAYASHI**

**Managing Director, Japanese American Soybean Institute, Nikkatsu International Bldg., No. 1-Chome Yurakucho Chiyoda-Ku, Tokyo, Japan**


IT IS ONLY in the last couple of years that the Japanese public has become conscious of the importance of public relations. The majority is still indifferent. Perhaps this is because the scope of the subject is so broad that they do not know where and how to start.

During the few years of promotional activities of the Japanese American Soybean Institute we have learned that if manufacturers give adequate attention to the public relations field sales of the various soybean products can be much increased. This is particularly true of marketing new products.

One of the main reasons for the lack of interest in public relations manifested by the soybean groups is the fact that the manufacturers and processors of miso, soy sauce, tofu and other soy products including oil have been enjoying a reasonably profitable business under the funds allocation system, which has afforded them a sort of protection.

Public relations including marketing research is becoming so important that if soybean groups continue to neglect this phase there will be no progress, especially when competition becomes keen after free importation of soybeans is permitted.

In order to help familiarize the various groups of the soybean industry with the necessity and importance of public relations activities the Japanese American Soybean Institute plans a series of seminars with lectures by the leading professional experts. The first was held recently in Tokyo. About 40 companies and organizations from various parts of Japan participated.

There were two lectures. The first was by Professor Naoyoshi Horikawa on public relations and top management. The other, by T. Shimizu, was on sales promotion.

Never in the history of the soybean industry has there been a gathering like this where the so-called "big shots" of leading organizations sat side by side at the table.

Encouraged by this seminar some companies have since carried out similar seminars on sales promotion for their own business connections and staffs. One is being held in Osaka by a large oil processing firm for their wholesale agents, one by a miso association in Sendai district for their members, and one by the frozen tofu association in Nagano.

It is hoped that many others will follow suit and that by such repeated seminars sales of soybean products will increase.

**JAPANESE-AMERICAN SOYBEAN INSTITUTE**

**ESTIMATED CONSUMPTION OF SOYBEANS DURING 1961 AS PLANNED BY THE JAPANESE GOVERNMENT (metric tons)**

| | Soybeans | Soybean meal |
|---|---|---|
| For oil processing | 928,000 | —— |
| Miso | 130,000 | 50,000 |
| Shoyu | 29,000 | 200,000 |
| Tofu, fried tofu | 280,000 | 20,000 |
| Frozen tofu | 40,000 | —— |
| Natto | 30,000 | —— |
| Kinako | 10,000 | —— |
| M. S. G. | —— | 73,000 |
| Other misc. foods | 20,000 | 40,000 |
| Livestock feed | —— | 303,000 |
| Others | —— | 21,000 |
| | 1,467,000 | 707,000 |

The total estimated quantity of 1,467,000 metric tons is compared with 1,226,000 tons during 1960.

GROUP WHO received ASA's meritorious service award with U. S. Ambassador John Davis Lodge. Left to right, Donald S. Hubbell, Carlos Luis de Cuenca, Miguel de Echegaray, Lodge, Javier de Salas, and William G. Lodwick.

# Soybean Market Grows in Egypt

By ANDRE TAWA
Director for UAR, SBCA, Cairo, Egypt

CAIRO IS the natural center of the Arab world, stretching from the Atlantic to the Persian Gulf and serving about 60 million people. For this reason Cairo was selected as the site of the Council's UAR office after careful consideration by USDA's Foreign Agricultural Service, the agricultural attaches, and the Council staff. The office was duly opened with full government support last October.

The UAR response was prompt and effective. In 1959, 6,948 tons of soybean oil were imported under Public Law 480 for soap manufacture. In 1960, 16,986 tons were imported for use in vegetable butter manufacture. In January 1961 a purchase authority was issued for an initial 15,000 tons of soybean oil. Discussions are now current concerning an additional 8,000 tons for soap manufacture, and eventually 30,000 tons for edible oil processing to supplement current cottonseed oil consumption which is estimated at 50,000 tons a year.

The Council has also been active in the field of animal feeds. A token dollar purchase of about 3,000 tons of beans for crushing is under discussion with the Ministry of Agriculture, the meal to be used for formula feeds and the oil to go to refiners.

Another planned project is for soybean oil to supplement linseed oil in the paint industry.

The Council, at the request of the Ministry of Agriculture, has ordered the production of a 10-minute talking film in color called, "Making Miracles with Modern Foods."

An international symposium on fats and oils is planned for April in Cairo in cooperation with the Arab Federation of Industries. And the Council is participating with an exhibit in the International Agricultural Exhibition in Cairo Mar. 21-Apr. 21.

The impact of these activities is already resulting in increased consumption and interest in soybean products. Requests for information have been received from the Sudan, Lebanon and neighboring countries, and this will result in expanded trade and knowledge of soybeans.

These achievements have been made possible by the wholehearted cooperation of FAS and other government and trade representatives, and Council officers. The enthusiasm of our cooperators is bound to insure an everexpanding market for soybeans in the Arab world, with resulting well-being through an abundant and efficient nutrition.

## Five Given Meritorious Service Award by ASA

FIVE MEN were recently presented in Madrid with meritorious service awards by the American Soybean Association in recognition of effective work in behalf of the export programs for U. S. soybeans and soybean products.

The certificates were presented by John Davis Lodge, U. S. ambassador to Spain. Those who received the awards:

Donald S. Hubbell, chief of the food and agriculture division, International Cooperation Administration, Madrid.

William G. Lodwick, agricultural attache, U. S. Embassy, Madrid.

Miguel de Echegaray, president of the Agricultural Research Institute, Madrid.

Carlos Luis de Cuenca, dean of the Veterinary College, University of Madrid.

Javier de Salas, director for Spain, Soybean Council of America, Inc.

The awards were in specific recognition of the efforts of these men in the second International Livestock Feeding Symposium in Madrid last fall.

C. B. Biddle

## Chester B. Biddle to Attend Verona Fair

CHESTER B. BIDDLE, Biddle Farms, Remington, Ind., will represent the Soybean Council at its display of soybeans and soybean products at the Verona, Italy, fair Mar. 12-17. He left the United States Mar. 8.

Mr. Biddle, who operates a highly successful Indiana farm specializing in the production of certified seed, hybrid corn, and Aberdeen-Angus cattle, is a past president and director of the American Soybean Association.

# 6 Months Progress in Netherlands

PROMOTION of good relations with soybean buyers in the Netherlands and Belgium, inducing two large Netherlands bakeries to use soy flour in their bread, countering unfavorable publicity to soybean oil when a brand of margarine caused a widespread outbreak of skin rash, taking steps to stop shipments of crotalaria-infested soybeans, preparing exhibits of soybean products at a series of Belgian fairs, and negotiations with the Belgian beer industry to test the value of soy flour in the manufacture of beer were among the accomplishments of the Council's Benelux office during its first 6 months, William A. Luykx, director of the Benelux office, reports. The office was opened last July 1.

Good markets for U. S. soybeans and soybean products existed already in the Netherlands and Belgium at the time of the opening of the Benelux office, Mr. Luykx points out. There was a much larger market in the Netherlands due to the consumption of margarine and the fact that the Dutch farmers use more formula feeds than do the Belgians. In Belgium only about 65% of livestock feeds are formula feeds, compared to 95% in Holland. But there is a good market in Belgium for soybean oil and salad oils, since there are fewer restrictions on their consumption in Belgium than in Holland.

The market for special products such as soy flour, flakes and proteins is still quite small, amounting to perhaps 200 tons a year.

Mr. Luykx says he considers that good relations with Dutch and Belgian importers, processors, brokers and feed industries are the primary task of the Benelux office.

Two large bakeries in the Netherlands have been using soy flour in their bread and several other products since last fall, apparently with great success. They stress the longer shelf life and better palatibility in selling these products.

Belgian housewives, restaurants and institutional users are good customers for soybean oil, according to Mr. Luykx. Also, the admixture of soy flour is permitted more widely in prepared foods such as meats.

The Soybean Council is cooperating with the Belgian Ministry of Agriculture and the Boerenbond, a powerful Belgian farmers' cooperative, to create a broader market for formula feed. Local feeding habits have to be overcome. Toward this end the Council is working with the U. S. Feed Grains Council in organizing a series of exhibits at national and provincial fairs.



## AMERICAN SOYBEAN ASSOCIATION

### ASA Convention Goes to Indianapolis in August

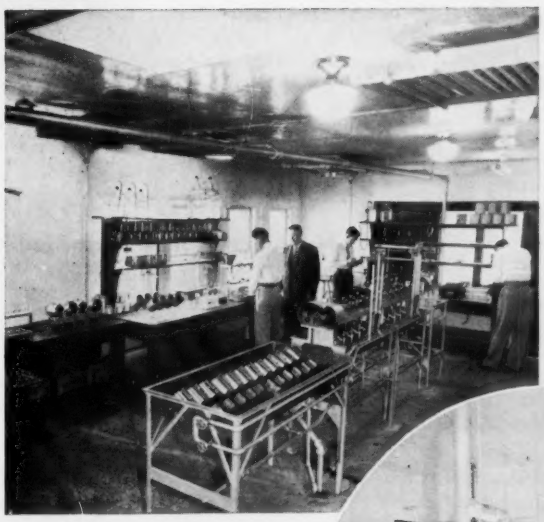
THE 41ST ANNUAL convention of the American Soybean Association will be held at the Claypool Hotel in Indianapolis, Ind., Aug. 28-29, the convention committee has announced

It will be a 2-day convention this year, on Monday and Tuesday. There will be no field trip. The last time the ASA convention was held in the state of Indiana was in 1952, when Purdue University at Lafayette was the host.

Members of the convention committee are: Chester B. Biddle, Remington, Ind., chairman; Richard Smith, Tilbury, Ontario; Glen Myers, Memphis, Mo.; and Harry Gatton, Jr., Rumsey, Ky.

Firms serving the soybean industry will have exhibits of products and services as usual this year.

# 7 Chemical Laboratories To Serve You 7



Our Chicago laboratory is equipped with the most modern equipment for refining soybean oils; soybean products and feeds.

Our Des Moines laboratory has the latest equipment for refining oils; soybean products and feeds.

Our Oil Refining Department at Memphis has a capacity of 150 refinings daily. We also are equipped to analyze soybean products and all types of feeds.

**LITTLE ROCK, ARK.**
**412 W. 7th St.**

**WILSON, ARK.**
**7 Union St.**

**CLARKSDALE, MISS.**
**75 Sunflower St.**

**CAIRO, ILL.**
**4007 Sycamore St.**

**CHICAGO 19, ILL.**
**1526 East 75th St.**

**DES MOINES, IOWA**
**1514 High St.**

*Specializing in Marine Surveying and Inspection at Chicago Port*

Official Chemists for the Chicago Board of Trade
Official Chemists for National Soybean Processors Association

*"Expert Analysis"*

**WOODSON-TENENT Laboratories**

ANALYTICAL AND CONSULTING CHEMISTS

**Phone: JA 5-6333** **Main Office: 265 S. FRONT ST.** **MEMPHIS, TENN.**

*Serving the Soybean Industry Since 1935*

## PUBLICATIONS

# Seed Treatment Tests at Minnesota

IN GENERAL, fair-quality soybean seed responds more to seed treatment than does high-quality seed, because of the general lack of vigor in poorer quality seed and because of the cracks and abrasions in the seedcoat that may afford entry for root-rotting and seed-decaying organisms, according to Minnesota studies. This is particularly true when soil conditions are unfavorable for germination and the seed lies in the ground for prolonged periods.

Although the majority of the commercial seed lots responded favorably to treatment, many did not respond and large yield reductions occurred in some cases.

The Minnesota men say until further studies are made and the reasons for such variations are learned, seed treatment of soybeans cannot be recommended as a general practice. But evidence indicates that treatment may protect the seed against detrimental effects resulting from deep planting and other unfavorable conditions.

No evidence was found to suggest that seed treatment adversely affected nodulation.

*Treatment of Soybean Seed in Minnesota.* By T. D. Wyllie and R. W. Goth. Plant Disease Reporter, Aug. 15, 1959. Vol. 13, No. 8, pages 898-902.

## Soybeans Respond Well To Lime in Arkansas

SOYBEANS HAVE responded well to applications of lime in Arkansas tests conducted in 1958 and 1959, and which are being continued for at least 3 years more.

*Lime Boosts Soybean Yields.* By Joseph L. Keogh, C. L. Parks and Richard Maples. Arkansas Farm Research, March-April 1960, page 5. Arkansas State Experiment Station, Fayetteville, Ark.

*The Effect of Fertilizers and Lime on the Yield of Soybeans, Baton Rouge, La., 1956-59.* By John Gray and M. B. Sturgis. Report of Projects, Department of Agronomy for 1959. Louisiana State University Agricultural Experiment Station, Baton Rouge, La.

*Soybeans Are a Good Cash Crop for Southeast.* By George E. Spain, North Carolina State College. Southern Planter, April 1960, pages 24-25. Richmond, Va.

*Soybeans.* By H. A. Woodle and E. C. Turner. Circular 370, revised June 1959. Extension Service, Clemson Agricultural College, Clemson, S. C.

## BOOKS

### New Feedstuffs Handbook Issued by Springer Co.

A FEEDSTUFFS handbook that "brings together every kind of useful information that can lead to improvement of feed efficiency" has been published by Springer Publishing Co.

The Handbook of Feedstuffs is written by Rudolph Seiden, consultant on veterinary pharmaceuticals and agricultural chemicals, and W. H. Pfander, professor of animal husbandry, University of Missouri.

It deals with the production of feedstuffs on ranches and farms or in factories, and the utilization of feedstuffs by all kinds of animals. Ration tables are included.

All economic plants of importance as feeds are described: grasses and cereals, legumes, root and leaf crops. Included are their preferences for climates, soils, and fertilizers; successful rotation programs; utilization as pasture, hay, silage, and as officially recognized feed products; their valuable varieties; plant diseases, insect pests, weeds; and modern methods to control them.

Considerable attention is given to soybean production even to including detailed information on varieties and diseases and the use of soybeans for forage and silage. Our comment would be that relatively too much space is given to these latter uses in relation to the space given soybean oil meal, when the great importance of meal as compared with the relatively minor importance of soybeans as hay or silage is considered.

The encyclopedic presentation is based on the work of hundreds of experts. The arrangement is so that the reader may find instantly any specific information.

*The Handbook of Feedstuffs.* Clothbound, 592 pages. Price $9. Order from the Soybean Digest, Hudson, Iowa.

**"Prescription" for his cornfields helps him get bumper crops.** Cargill Prescription Service—a new management plan provided free by Cargill's Hybrid Corn Department—helps this farmer get bigger yields by taking the guesswork out of his planting. Here's how it works. A Cargill representative studies the farmer's corn-raising practices and objectives. He takes into consideration the type of soil, the fertility level, drainage, the plant population, fertilizer program and planned planting and harvesting methods. After examining these factors and consulting with top corn specialists from Cargill Technical Services, he gives the farmer a written "prescription" (complete with maps of his fields). The prescription recommends the Cargill hybrid corn varieties needed and planting order. Result: the best program for assuring big yields with minimum risk. It's another way that Cargill, through science and service, helps extend the reach of this important businessman—the American farmer.

# CARGILL *EXTENDING THE REACH OF THE AMERICAN FARMER*

# GRITS and FLAKES . . . *from the World of Soy*

## General Mills Forms Specialtiy Products Dept.

A newly formed specialty products division of **General Mills, Inc.,** has been announced by C. H. Bell, company president. The new division is a combination of the former oilseeds and special commodities division.

Vice president Sewall D. Andrews, Jr., who has headed the oilseeds operation, will serve as general manger of the new division.

The specialty products division will operate the company's oilseeds processing plants in Belmond, Iowa, and Rossford, Ohio, and joint venture with the Pacific Vegetable Oil Corp. at Sidney, Nebr., producing soybean and safflower oils used in a wide variety of food and industrial applications.

## Wootton New Sales Engineer for S. Howes

Raymond L. Wootton has been appointed to the newly created post of director of sales engineering for **S. Howes Co.**, Silver Creek, N. Y. He will coordinate the operations of the design engineering staff with those of the sales organization.

Mr. Wootton brings to his new position a long background in engineering, design and product development. He served 7 years as assistant to the chief engineer of Aeroglide Corp., Raleigh, N. C. He was previously associated with General Air Conditioning Co., Raleigh, and with Wallace & Tiernan Co., Newark, N. J., in engineering capacities.

R. L. Wootton

## Joe Robinson Receives Iowa Crop Assn. Award

Joe L. Robinson, professor of agronomy at **Iowa State University,** Ames, has received a life membership in the Iowa Crop Improvement Association, and the association directors have presented him with a power lawn mower.

Robinson served as secretary-treasurer of Iowa Corn and Small Grain Growers Association, the Iowa Agricultural Experiment Association and the Iowa Crop Improvement Association from 1920 to 1959. Since then he has been serving as assistant secretary-treasurer of the seed certifying agencies in Iowa. For 39 years he guided the certified seed growers in Iowa. He is looked upon as "Mr. Seed Certification in Iowa," according to Charles Hutchcroft, secretary of the Iowa Crop Improvement Association.

Joe L. Robinson

Donald Coticchia

C. R. Bauer

## New Appointments by R. J. Brown Co.

C. R. Bauer, formerly division manager at Louisville, Ky., for the R. J. Brown Co., has been appointed division manager of the company's Memphis plant, effective immediately. Mr. Bauer ("C. R." to associates) has been with Bronoco for several years.

Donald Coticchia has been added to the staff of sales representatives of **R. J. Brown Co.,** and will headquarter in Cleveland to serve Bronoco customers in that marketing area. Prior to joining R. J. Brown, "Don" Coticchia had over 10 years experience in purchasing and personnel work with industrial organizations in Cleveland.

## Reichmann Is Chicago Board of Trade Head

James P. Reichmann, a floor broker, was elected chairman of the **Chicago Board of Trade**, according to Robert C. Liebenow, president of the Exchange. Mr. Reichmann, who will serve a 1-year term, has been vice chairman for the past year and a director for 6 years before that.

The new vice chairman is Bernard P. Carey, an independent trader who has served 1 year as second

vice chairman and 6 years as director. Second vice chairman for the coming year will be George J. McKerr, senior partner of George J. McKerr brokerage firm and a former director.


James P. Reichmann

Five directors elected to 3-year terms are: Donald O. Cuthbert, assistant secretary, Central Soya; William J. Griffin, Griffin Grain Co.; Roy C. Loftus, Francis I. duPont & Co.; James McAnsh, Merrill Lynch, Pierce, Fenner & Smith, Inc.; and Richard M. Withrow, partner, Lamson Brothers & Co.

## Columbian Advances Parsons, Belval

Richard Parsons and Henry Belval received notices of new titles during a recent 4-day sales conference at **Columbian Steel Tank Co.'s** offices in Kansas City, Mo.

Parsons, who was appointed assistant general manager of sales, will continue his direct supervision of all traveling and territory sales personnel, handling office contacts for contractors and distributors, active promotion of grain storage and oilfield bolted tanks, and supervison of office personnel assigned to these products. Parsons joined Columbian's staff in 1953.


Richard Parsons

Henry "Andy" Belval, associated with Columbian since 1945, was named manager of sales, steel buildings.

## New Armour & Co. Plant at Kankakee

Plans for construction of a new plant near Kankakee, Ill., for production of edible fats and oils to meet the changing needs of the food industry, were announced by William Wood Prince, president of **Armour and Co.** Cost of the project will approximate $6,500,000, Mr. Prince said.

There have been rapid technological developments in the shortening, edible oil and margarine field in recent years, and advanced equipment is needed to make products which meet the specifications of large commercial bakers, confectioners and other food processors, as well as consumers. More than one-third of Armour and Co.'s total refinery business now is in "specification products," shortenings which meet the customer's exact standards as to melting point, plasticity range, stability and other technical qualifications.

## Davidson-Kennedy Names Campbell Vice President

**Davidson-Kennedy Co.,** Atlanta machinery manufacturer, has named Tom C. Campbell vice president. He will also serve as president of Manufacturers Products Co., a wholly owned subsidiary.

In his new capacity Mr. Campbell will direct sales for Davidson-Kennedy Co., designers and manufacturers of machinery for the vegetable oil mill, fertilizer and textile industry.


Tom C. Campbell

Prior to joining Davidson-Kennedy, Mr. Campbell was regional manager of Foote Bros. Gear & Machine Corp., and was previously production engineer at Central Soya, Chattanooga.

## Wilson Representative of American Mineral Spirits

Richard J. Wilson has been appointed a sales representative for **American Mineral Spirits Co.,** in Illinois, Indiana, Iowa and Wisconsin. His headquarters will be Amsco's office at 200 S. Michigan Ave., Chicago 4, Ill.


Richard J. Wilson

Mr. Wilson is a graduate engineer of the University of Missouri School of Mines. Previous to his coming with Amsco he was employed by the Mobil Oil Co.

**Schutte Pulverizer Co., Inc.,** Buffalo, N. Y., has appointed General Mill Supply, Inc., Marion, Iowa, as its new factory distributor and warehouse in the Midwest. General Mill Supply will stock a complete line of Schutte hammermills and parts to assure immediate delivery throughout its Midwest sales territory, and also sell lines of related equipment to the milling trade.

Roy E. Shay has been named to the newly created position of assistant plant superintendent, **A. E. Staley Manufacturing Co.,** Decatur, Ill. He joined Staley's in 1942 and was named labor relations assistant in 1958.

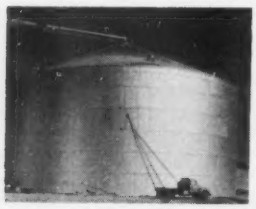
**Morrison-Quirk Grain Co.,** Hastings, Nebr., recently purchased the 13,000-acre Tschudy Farms in Poinsett County, Ark., for more than $2½ million, bringing the firm's Arkansas farm holdings to 33,000 acres in Cross and Poinsett Counties. The firm plans large scale plantings of cotton, soybeans and rice.

**Archer-Daniels-Midland Co.,** Minneapolis soybean processor, has announced organization changes which include adding the Prochem division to the agriculture group under the direction of E. A. Olson, executive vice president. The Prochem division produces and markets soy flour, isolated proteins and industrial cereals.

Name of L. B. Lovitt & Co., Memphis brokerage firm, has been changed to **John J. Pepin & Co.** Mr. Lovitt died last year. Mr. Pepin has been with the firm for many years.

# NEW PRODUCTS and SERVICES

**STORAGE TANK.** The world's largest bolted steel storage tank was recently filled with 500,000 bushels of milo at Hale Center, Tex. Fabricated by National Tank Co., for H. E. Graham of the Six Point Grain Co., the tank is 113 feet in diameter and 48 feet at eave height. Prior to the completion of the Texas-size tank late in 1960, the largest bolted steel grain tank ever built was 55 feet in diameter.



National Tank developed the design for large diameter tanks so that the customer would have the advantage and economy of shop fabricated mass production and shop quality control and painting.

This 30-million-pound-capacity tank was designed for 60-pound-per-bushel grain and to withstand 100-miles-per-hour winds. Tank roof is self-supporting with no interior columns. Field verification of research and design principles during tank loading was done by Texas Testing Laboratories.

For more information write Soybean Digest 3f, Hudson, Iowa.

**DRIER.** Gentle, efficient grain handling coupled with low operating cost and improved safety features make the new Black, Sivalls & Bryson 400-bushel portable grain drier one of the best ever developed for farm use, according to company spokesmen.

The BS&B drier is equipped with an "in-line" burner and a direct air intake which provides turbulent action of the air and gas within the refractory-lined burner chamber for maximum efficiency of combustion. A modulating valve maintains uniform heat at the desired temperature setting.

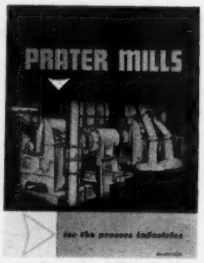
The smooth, powerful fan moves 35,000 cubic feet of drying air per minute through the grain, and is statically and dynamically balanced.

Smooth bin walls are of 16-gauge galvanized steel with rectangular inner and outer wall slots which never clog, always allow full air flow.

Vertical movement of the grain is achieved by a 1,400-bushel-per-hour bucket-type elevator which eliminates kernel shattering.

For further information write Soybean Digest 3c, Hudson, Iowa.

**INDUSTRIAL MILLS.** Industrial mills for all types of processing problems are illustrated and described in an all-new Prater bulletin PR-60.

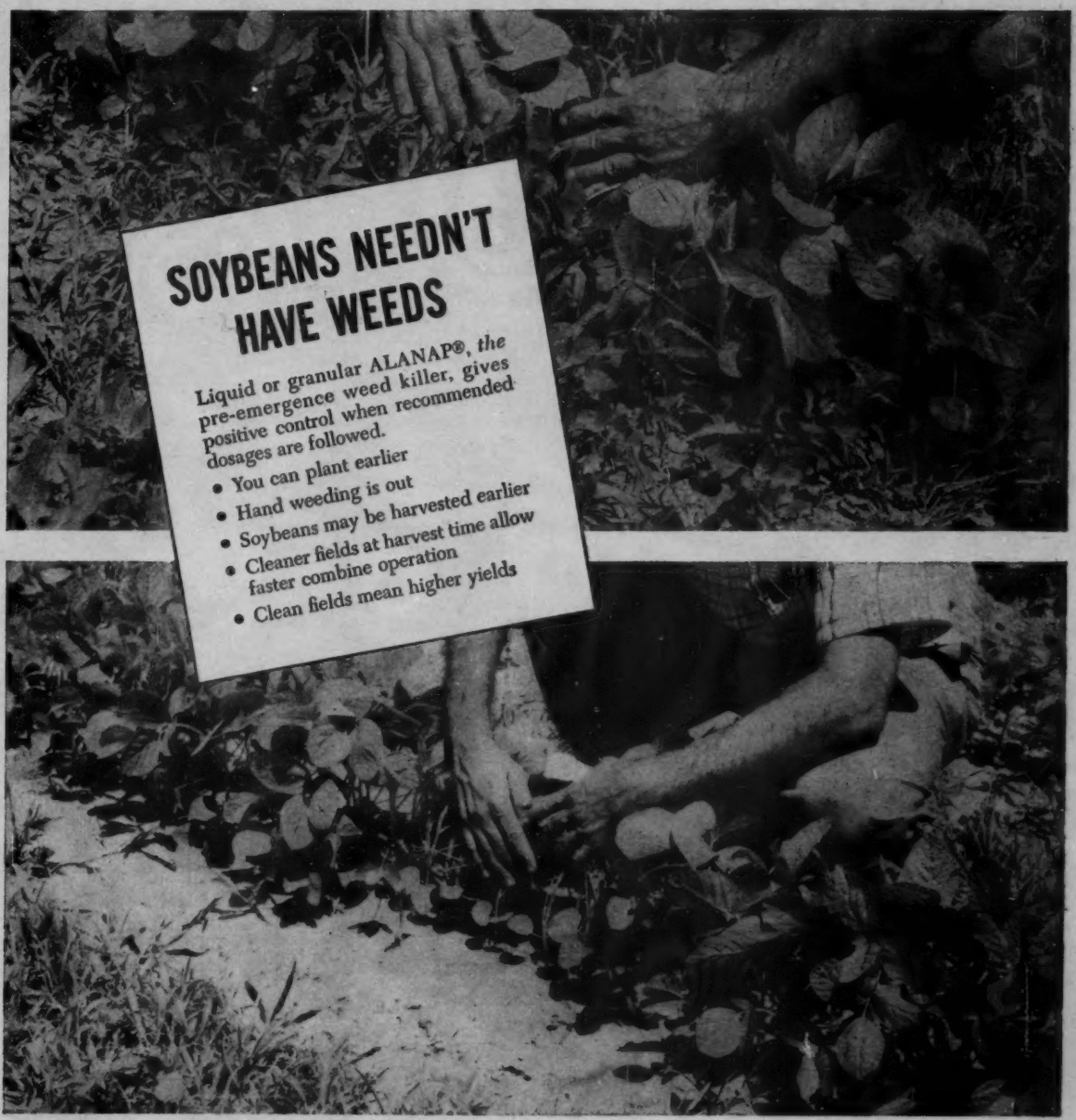



Discussed are Model G6H intermediate mill and the Prater Granulator used principally in breaking up water balls or agglomerations of soybeans, cottonseed or linseed meal.

For your copy of bulletin PR-60 write the Soybean Digest 3e, Hudson, Iowa.

# ALANAP®

PRE-EMERGENCE WEED CONTROL




Upper photo shows soybeans choked with weeds. Lower photo shows healthy soybeans growing freely after treatment with ALANAP, the pre-emergence weed killer.

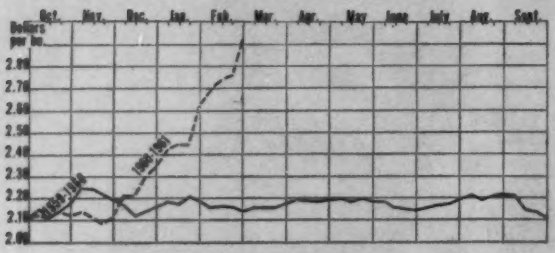
**United States Rubber**

**Naugatuck Chemical Division**

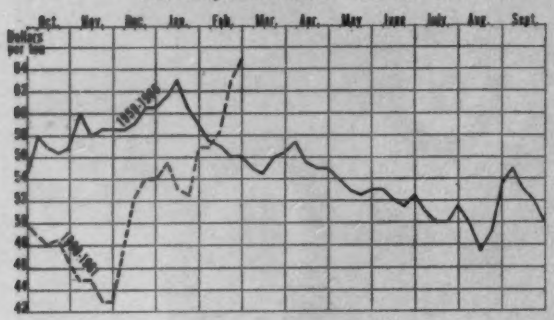
396AL Elm Street, Naugatuck, Connecticut

producers of seed protectants, fungicides, miticides, insecticides, growth retardants, herbicides: Spergon, Phygon, Aramite, Synklor, MH, Alanap, Duraset.

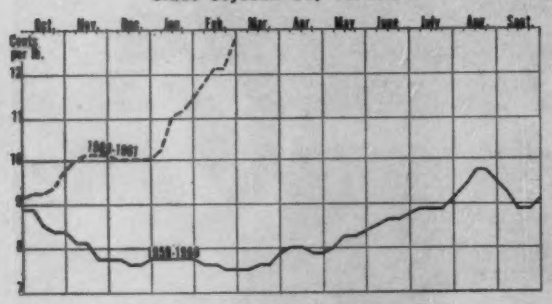
## TRENDS AT A GLANCE (Weekly Close)
### No. 1 Cash Soybeans, Chicago



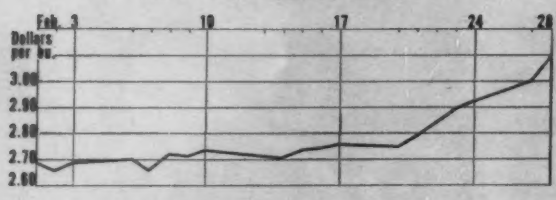

### Bulk Soybeans Meal, Decatur



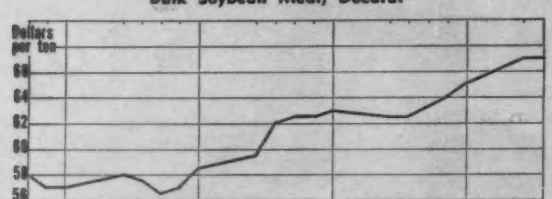

### Crude Soybean Oil, Tankers



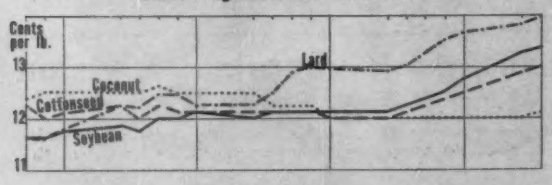

## DAILY MARKET PRICES
### No. 1 Cash Soybeans, Chicago



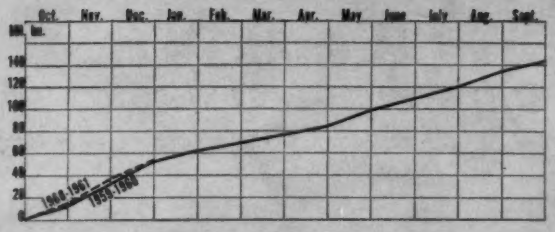

### Bulk Soybean Meal, Decatur



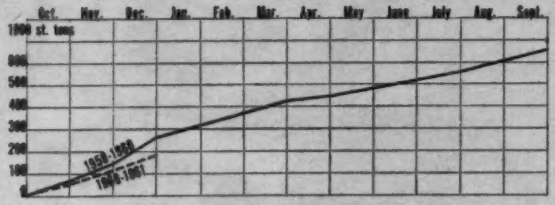

### Crude Vegetable Oils and Lard



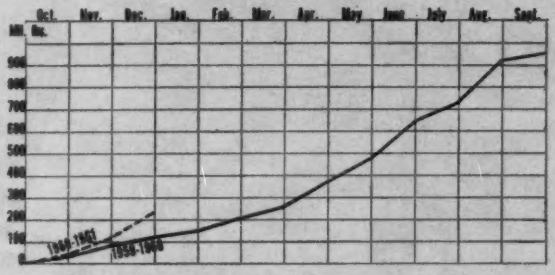

## EXPORTS 1959-60 AND 1960-61
### Cumulative year beginning Oct. 1




### Soybean Cake and Meal Exports




### Soybean Oil Exports




## CASH PRICES, FEBRUARY, 1961*

| Feb. | No. 1 yellow soybeans Chicago | Bulk soybean meal Decatur | Soybean oil Decatur | Cottonseed oil Mississippi Valley | Coconut oil Pacific Coast | Lard Chicago |
|---|---|---|---|---|---|---|
| 1 | $2.68¼ | $58.00 | $.11⅝ | $.12¼ | $.12⅜ | $.1160 |
| 2 | 2.65¾ | 57.50 | .11⅝ | .12 | .12½ | .1160 |
| 3 | 2.68½ | 57.00 | .11¾ | .12⅛ | .12½ | .1180 |
| 4 | Saturday | | | | | |
| 6 | 2.70¼ | 58.50 | .11⅞ | .12¼ | .12½ | .1225 |
| 7 | 2.65¼ | 57.50 | .11¾ | .12 | .12½ | .1220 |
| 8 | 2.71½ | 56.50 | .12 | .12¼ | .12⅜ | .1245 |
| 9 | 2.70¾ | 57.00 | .12 | .12⅛ | .12½ | .1245 |
| 10 | 2.73¼ | 58.50 | .12⅛ | .12⅛ | .12¼ | .1227 |
| 11 | Saturday | | | | | |
| 13 | 2.71 | 59.50 | .12 | .12⅛ | .12½ | .1220 |
| 14 | 2.70¼ | 62.00 | .12⅛ | .12⅛ | .12¼ | .1250 |
| 15 | 2.73¼ | 62.50 | .12⅛ | .12⅛ | .12¼ | .1287 |
| 16 | 2.74½ | 62.50 | .12⅛ | .12⅛ | .12¼ | .1295 |
| 17 | 2.75¾ | 63.00 | .12⅛ | .12 | .12 | .1297 |
| 18 | Saturday | | | | | |
| 20 | 2.75 | 62.50 | .12⅛ | .12 | .12 | .1290 |
| 21 | 2.78¼ | 62.50 | .12¼ | .12⅛ | .12 | .1302 |
| 22 | Holiday | | | | | |
| 23 | 2.88¼ | 64.00 | .12½ | .12⅜ | .12 | .1355 |
| 24 | 2.92 | 65.00 | .12¾ | .12½ | .12 | .1365 |
| 25 | Saturday | | | | | |
| 27 | 3.00 | 67.00 | .13¼ | .12⅞ | .12 | .1382 |
| 28 | 3.09½ | 67.00 | .13⅜ | .13 | .12⅛ | .1395 |

* From Wall Street Journal, Chicago.

### 1959 AND 1960 SOYBEAN CROPS

| | 1960 | 1959 |
|---|---|---|
| Total soybeans placed under price support through Jan. 31 | 25,307,000 bu. | 47,854,000 bu. |
| Loans repaid as of Jan. 31 | 5,115,000 bu. | 1,246,000 bu. |
| Soybeans crushed Oct. 1-Jan. 31 | 148,320,000 bu. | 139,163,000 bu. |
| Soybeans exported Oct. 1-Jan. 31 | 69,349,000 bu. | 60,904,000 bu. |
| Balance on Feb. 1 for processing, export or carryover | 329,318,000 bu. | 356,225,000 bu. |
| Total soybeans inspected for overseas export plus lake shipments to Canada Oct. 1-Feb. 27 | 70,600,000 bu. | 67,200,000 bu. |

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For over a quarter of a century FORSBERG dust-free seed cleaning equipment is recognized as the finest in the world. Operators have proven FORSBERG equipment maintenance-free . . . eliminating costly breakdowns. Today FORSBERG manufactures a complete line of seedcleaning equipment including vacuum separators, gravity separators, stoners, scalpers, leg-airs, and screeners all balanced to operate perfectly together for greater economy. Ask your local FORSBERG representative for a free estimate . . .



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EXCLUSIVE VACUUM GRAVITY principle for cleaner, dust-free operation . . . no blast fans . . . no open deck . . . all enclosed for safer operation — no dangerous exposed belts or moving parts. Built-in accuracy with highly efficient air-controls . . . no additional adjustments needed. Cleans products to "hair-line" perfection.

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**Don Gray**

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**Arlington, Texas**
**Tim Vannerson**

**Owatonna, Minnesota**
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**Kirksville, Missouri**
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## WASHINGTON DIGEST

# Use Soybeans in Peace Offensive

By GEORGE PETER

Washington correspondent for the Soybean Digest

PLANS ARE moving ahead full speed at the White House on what will be the world's biggest peace offensive, using food as a weapon.

Fats and edible oils, meats, butter, nonfat milk, peas and soybeans are the food products that will be added in quantity to the already heavy shipments of grains which have been exported abroad under P. L. 480 as part of the Food for Peace program.

Soybeans and soybean oil are scheduled to take top billing as potent nutritional missiles as the White House Food for Peace advisers see it. Major reasons: high nutritional value, easy transportability, and relatively simpler to handle all around.

Meat, butter, and nonfat milk are also highly nutritious, but the United States is not ready yet to produce these in sufficient quantities for defense export purposes.

### Soybean Production Pushed

Demand for Food for Peace production is what is behind White House efforts and intentions to go all out in pushing an increase in soybean production, although the favorable market ahead in response to normal conditions was already considered sufficient to bring about an increase in supplies.

This is also what was behind the $2.30 price support level for soybeans, made a part of the package deal for feed grains. Soybean industry estimates considered $2.16 high enough to produce the necessary increase in production without at the same time endangering foreign demand and encouraging other fats and oils producing countries to increase their own production.

Even higher support levels were considered, as high as $2.35, if Congress increased the price support for corn to $1.30 instead of the Administration's $1.20 as some lawmakers wanted.

This is cited to give you an example how important the increased production was and still is to the Food for Peace program, as the new Cold War strategists see it.

Question being raised by many who have the soybean grower's and industry's interests at heart: If growers increase production in response to government's needs, will they later have to bear the brunt of charges that they were overproducing, living at the public trough, or worse?

High sources we have talked to about this question say emphatically, NO. The Secretary of Agriculture has the authority, with or without new legislation, to manage the switch from other crops to soybeans by any number of legal gimmicks.

### Peace Food to Take Up Slack?

Off the record, officials expect to have to go into the bean storage business in a big way but they are not worried because they expect the expanded Food for Peace program to take up the slack.

The new Administration has asked for an increased budget of $2 billion to round out 1961 expectations for P. L. 480 alone. At least $3 billion are requested for the following year and for 4 years afterward. The outgoing administration had asked for $1.3 billion to round out 1961 for the P. L. 480 program and also $3 billion a year for the next couple years of P. L. 480. The outgoing Budget Bureau killed the $3 billion request.

### The 1961 Crop

Estimates—admittedly premature—are that at least 3 million additional acres will go into soybeans as a result of the current season's favorable market price relationship of beans as compared with corn. Take a look at it—about 96¢ average for corn compared to, at times, $2.72 for beans.

These estimates vary greatly, but all are by expert sources close to the fats and oils and soybean industry. The lowest estimate of an increase—with or without a new feed grain law—is about 2 million additional acres to beans. With a new feed grain law and soybean support at $2.30 floor, the minimum acreage is estimated to increase 3 million acres. More bullish (acreagewise) estimators place it higher than that.

But take the average estimated increase — 3 million acres — that would mean a crop of about 635 or more million bushels, up about 75 million over last year. This would be the biggest soybean production on record.

A crop of this size would mean an increase of income to growers of about $350 million over 1960—more beans at a higher price average.

### World Food-Peace Plans

Plans to make the U. S. Food for Peace program part of the Food and Agriculture Organization's 5-year Freedom from Hunger campaign are also accelerating. U. S. participation has far from jelled, however.

Following the recent meeting between Director General B. R. Sen of the United Nations Food and Agriculture Organization and Secretary of Agriculture Freeman, the Secretary felt that the U. S. Food for Peace efforts could be coordinated with the broader, worldwide Freedom from Hunger campaign launched by the United Nations, FAO.

The next step, yet to be completed, is how to gear the U. S. program to the international program to secure the greatest impact. On this level, State Department, USDA, and White House officials are working on estimates of how much and what kind of food are in need for such a program.

## Karnofsky Appointed By Blaw-Knox Co.

Blaw-Knox Co. announced the appointment of George Karnofsky as manager of development of its chemical plants division. Mr. Karnofsky joined the company in 1943 and has served in a number of research and development capacities. He developed the Blaw-Knox Rotocel, a proprietary device for the solvent extraction of vegetable oils and increasingly used for this and other applications.

## To Cedar Rapids Plant

Richard Longway, formerly grain merchant for Cargill, Inc., in Portland, Ore., has been named manager of the firm's branch office in Cedar Rapids, Iowa. He replaces W. Dart Smith who retired Jan. 31, after 27 years with Cargill.

## Utilization Chart Features Blue Book

A SOYBEAN UTILIZATION chart which lists the many and diverse uses of soybeans features the 1961 edition of the Soybean Blue Book, out Mar. 1, according to Geo. M. Strayer, executive vice president of the American Soybean Association. The Blue Book, which is the yearbook and annual directory of the soybean industry, is published by the Soybean Association.

The attractive appearing chart can be taken out of the book and hung on the wall if desired, according to Mr. Strayer.

Another feature of the 1961 book is a complete glossary of definitions and terms used by the soybean industry which will be valuable as a reference work, Strayer says.

A total of 148 plants processing soybeans in the United States, including four new ones, are listed in the 1961 Blue Book. U. S. soybean processing capacity has increased by 25 million bushels, to 525 million bushels during the past year.

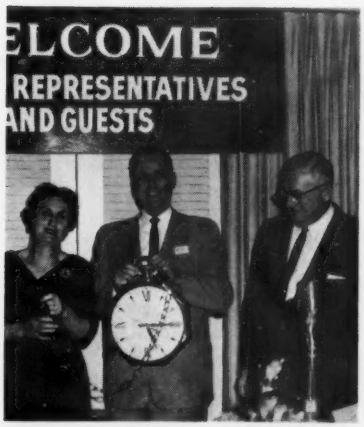
The book also lists seven Canadian and sixty-four foreign soybean processing plants, 17 of them unlisted last year.

World trade in soybeans and soybean products has shown recent tremendous expansion, with 142 million bushels out of a 534-million-bushel crop being exported in 1960, as well as a billion pounds of soybean oil and 650,000 tons of soybean meal, says Strayer.

Assembled in the Soybean Blue Book for quick reference are the latest statistics on production and exports, prices and utilization of soybeans, meal and oil. There are directories of soybean trade groups, soybean processors, oil refiners, and manufacturers using soy products in their operations, as well as firms offering their services and equipment to the soybean industry.

The book is available at $3 per copy from the American Soybean Association, Hudson, Iowa.

## 14 Years with Prater




**WILLIAM (BILL) EARL, popular sales manager of Prater Pulverizer Co., reflects on almost 14 years with the company. Mrs. Earl helps handle the "time" problem. George F. Thomas, right, Prater president, presented the huge timepiece at recent annual sales meeting.**

## 50-Bushel Club Has Twenty-Seven Members

TWENTY-SEVEN Indiana farmers are members of the 50-bushel soybean club in that state for 1960, the Indiana Crop Improvement Association reports. Yields of these top producers ranged from the 60.1 bushels per acre grown by the champion, W. R. Orr, Tipton, to 50.2 bushels per acre.

Only four different varieties were grown last year by members of the 50-bushel club. Twelve grew Clark, seven, Harosoy, five, Lindarin, and three, Shelby.

# - MARKET STREET -

**We invite the readers of THE SOYBEAN DIGEST to use MARKET STREET for their classified advertising. If you have processing machinery, laboratory equipment, soybean seed, or other items of interest to the industry, advertise them here. Rate 10¢ per word per issue. Minimum insertion $2.00.**

**MINNESOTA CERTIFIED SOYBEAN** seed. Merit: germination 98, purity 99.75. Lindarin: germination 97, purity 99.89. Above varieties hand rogued. Packed in new 1 and 1½ bushel bags. Sewed, tagged and sealed. Merlin Knorr, Madison, Minn.

**MISSISSIPPI CERTIFIED HILL, REBEL,** Jackson. Also Mississippi registered Gulfrose seed rice. All of these quality seed air dried, low moisture, high germination. Bard Selden, Tunica, Miss.

**EQUIPMENT WANTED—USED SEED** cleaning equipment, cleaners, elevators, separators, etc. Chester C. Clift, Route 1, Coushatta, La., Phone WE 2-4763.

**FOR SALE—FAIRBANKS-MORSE** 150-ton, 50-ft. railroad track scale. Excellent condition. Write Cassidy Feed Mills, Box 95, Richardson, Tex.

**WE MANUFACTURE STEEL ELEVATOR** legs, screw conveyors, pit screws, valves, elbows, piping, collectors, enclosed distributors, etc. Write for catalog and prices. Creamer Sheet Metal Products, London, Ohio.

**QUALITY SEEDS—BURNETT, CLINT**land 60, Goodfield, Minhafer, Minton, Nehawka, Rodney, etc., oats. Chippewa, Comet, Lindarin, Merit, etc., soybeans. Eldred Buer & Sons, Canby, Minn.

**PRATER 75 H.P. DUAL SCREEN PUL**verizer. Also 100-lb. Richardson meal scale and Union Special 12-inch belt sewing machine. Ray L. Jones, 1923 Hayselton Drive, Jefferson City, Mo.

**FOR SALE—ANDERSON EXPELLERS** and French screw presses, cookers, driers, 5-high, 48-inch crushing rolls, 36-inch attrition mills, sewing machines, hammermills, cracking rolls, filter presses. Ray L. Jones, 1923 Hayselton Drive, Jefferson City, Mo.

**GRAIN STORAGE AT 18¢ PER BUSHEL** in tanks complete. This is storage at the lowest possible cost. Allied Tank Co., 1207 Commerce Trust Bldg., Kansas City, Mo. Phone Harrison 1-0282, Baltimore 1-5789.

MODERN REBUILT GUARANTEED
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**FOR SALE—HABCO MODEL 2S SOYBEAN** inoculator and liquid seed treater—new unit. Send for literature and other information to H. A. Brummel Co., P. O. Box 201, Cedar Lake, Ind.

# SEED DIRECTORY

### ALABAMA

**Headland**—Moran Baxter, 506 E. Church St., 2,500 bu. interstate certified Yelnanda.

### ARKANSAS

**Burdette**—G. A. Hale, Hale Seed Farms, 8,000 bu. registered Hale Ogden No. 2; 1,000 bu. uncertified Hale No. 3; 1,000 bu. uncertified Hale No. 7.

**Grubbs**—Denton Brothers, Inc., certified Lee, Hood and Rebel; registered Hill.

**Scott**—Robert L. Dortch Seed Farms 20,000 bu. certified Dortchsoy 2A; 7,500 bu. certified Dortchsoy 31; 10,000 bu. certified Hood; 15,000 bu. certified Lee; 25,000 bu. certified Jackson.

**Wynne**—Holleman Seed Service Co., Rt. 1, Box 129, 12,000 bu. certified Lee; 8,000 bu. certified Jackson; 1,000 bu. registered Hill; 1,000 bu. certified Hill; uncertified Lee and Jackson.

### ILLINOIS

**Bloomington**—Sam Huey, Box 329, phone 967-2755, Harosoy, Hawkeye, Lindarin, Shelby, all certified.

**Farina**—Ging, Inc., 25,000 bu. uncertified Clark; 5,000 bu. certified Shelby; 5,000 bu. uncertified Shelby.

**Kankakee**—A. L. Book & Co., P. O. Box 388, 200,000 bu. uncertified Harosoy.

**Mattoon**—Monroe Farrar, Rt. 4, 1,250 bu. certified or uncertified Shelby.

**Mundelein**—Huebsch Seed Farms, 135 Midlothian Rd., Lindarin, Hawkeye, Ford, Harosoy, Chippewa, all certified.

**Pontiac**—Wilken Seed Grains, Rt. 4, supplies of certified and noncertified Lindarin, Harosoy, Hawkeye, Shelby, and Adams.

**San Jose**—Kelly Seed Co., 3,000 bu. certified Hawkeye; 4,000 bu. certified Harosoy; 1,000 bu. certified Clark; 8,000 bu. registered No. 2 Shelby; also 7,000 bu. registered Lindarin.

**Villa Grove**—Turner Seed & Supply Co., Phone 7621, certified Lindarin, Harosoy, Adams, Shelby, Clark.

**Wilmington**—James J. Gorman, Rt. 66A, 1,000 bu. registered No. 1 Lindarin; 3,000 bu. registered No. 2 Harosoy.

### INDIANA

**Bluffton**—Gordon & Walburn, Rt. 1, Ph. Liberty Center 49J1 or 49J5, 900 bu. certified Lindarin; 800 bu. uncertified Lindarin; 600 bu. certified Shelby.

**Bluffton**—Earl F. Rudy, Rt. 2, 400 bu. certified Shelby; 400 bu. certified Lindarin.

**Valparaiso**—Wykoff Hybrid Corn Co., registered No. 1 Chippewa; registered Lindarin; certified Blackhawk.

**West Lafayette**—Agricultural Alumni Seed Improvement Association, Inc., 2336 Northwestern Ave., foundation seed for certified production of Shelby, Lindarin and Clark.

### IOWA

**Albert City**—John Helgeson, Rt. 1, 750 bu. certified Ford.

**Clemons**—Donald M. Rogers, 2,000 bu. certified Ford.

**Hudson**—Strayer Seed Farms, 1,500 bu. certified Ford; 1,200 bu. certified Chippewa.

**Marcus**—Sand's Seed Service, 20,000 bu. certified Hawkeye; 40,000 bu. uncertified Hawkeye; 3,000 bu. uncertified Chippewa.

**West Liberty**—George W. Miller, Rt. 2, 500 bu. certified and uncertified Ford.

### KANSAS

**Columbus**—Farmers Cooperative Association, Box 80, 20,000 bu. uncertified Clark.

### MICHIGAN

**Saginaw**—Donald Boese, 1880 Evon Rd., 1,400 bu. certified Chippewa; 500 bu. certified Blackhawk.

### MINNESOTA

**Benson**—Munson Seed Co., 3,000 bu. certified 1st gen. Chippewa; 400 bu. certified 1st gen. Blackhawk; 2,000 bu. uncertified Comet.

**Bird Island**—A. A. Ziller, 200 bu. certified and registered Ottawa Mandarin; 200 bu. certified and registered Capital; 400 bu. certified Norchief; 300 bu. registered Comet; 1,000 bu. certified and registered Chippewa; 300 bu. certified Lindarin.

**Canby**—Eldred Buer & Sons, Chippewa, Comet, Landarin, Merit, etc.

**Hanska**—J. H. Schrooten, Rt. 2, 4,000 bu. certified 1st gen. Lindarin; 500 bu. Ford; 2,000 bu. Chippewa; 600 bu. Comet; 800 bu. Harosoy; also Blackhawk, Ottawa Mandarin, and Norchief, all certified or registered.

**Hastings**—Henry Trapp, Rt. 2, 2,000 bu. certified Chippewa.

**Madison**—Merlin Knorr, Merit and Lindarin.

**Moorhead**—Harold W. Tobolt, 1,000 bu. certified Norchief; 3,000 bu. uncertified Grant.

### MISSISSIPPI

**Indianola**—Bobshaw Pedigreed Seed Co., P. O. Box 483, 25,000 bu. registered Rebel.

### MISSOURI

**Appleton City**—Lloyd E. Reasoner, Rt. 1, 400 bu. certified Clark.

**Hayti**—Jacob Van Dyke, Rt. 1, Box 443, 1,000 bu. registered and certified Hill.

**Louisiana**—Farm Supply Co., noncertified Clark; noncertified Shelby; good quality and germination.

**Painton**—Odus Strobel, Rt. 1, 4,500 bu. certified Hill.

**St. Joseph**—Jim Pitts, Rt. 6, Box 366A, 4,000 bu. uncertified Clark.

**St. Louis 24**—Cypress Land Farms Co., 8129 Delmar, 1,000 bu. noncertified Lee; 2,000 bu. noncertified Ogden; 2,000 bu. noncertified Clark; 500 bu. noncertified Perry; 500 bu. noncertified Shelby.

### NEBRASKA

**Elk City**—Wahlgren Seed Farms, 1,200 bu. certified Ford.

**West Point**—Fred A. Meyer, Rt. 2, Box 98, 175 bu. certified Ford; 200 bu. uncertified Chippewa.

### NORTH CAROLINA

**Aulander**—Herbert Jenkins, 500 bu. certified Hill; 500 bu. certified Hood.

**Selma**—Gurley Milling Co., Box 488, 5,000 bu. uncertified Lee; 2,500 bu. certified and registered Lee; 5,000 bu. uncertified Jackson; 1,000 bu. certified Jackson; 1,000 bu. uncertified and certified Hood; 500 bu. certified Hill; 2,500 bu. uncertified Roanoke; 1,000 bu. uncertified Roanoke; 1,000 bu. uncertified Ogden; 3,000 bu. uncertified J.E.W. 45; 2,500 bu. uncertified C.N.S. 4 and 24; 500 bu. Wood's Yellow; 500 bu. Tokyo and other varieties.

### OHIO

**Arcanum**—Tenney Seed Co., Rt. 2, new phythophthora root rot resistant varieties—100 bu. certified Henry; 100 bu. certified Ross; 500 bu. certified Madison.

**Green Camp**—Green Camp Cooperative Elevator Co., 2,000 bu. registered Lindarin.

**Sylvania**—Harold Creque, Rt. 1, Box 291A, 800 bu. uncertified Lindarin.

### OKLAHOMA

**Wagoner**—Bob Jeffrey Co., Inc., Box 308, 350 bu. registered Hood; 600 bu. registered Lee; 600 bu. noncertified Clark; 1,200 bu. noncertified Hood; 1,000 bu. noncertified Lee.

### VIRGINIA

**Clay Bank**—Louis Groh & Son, Inc., 12,000 bu. uncertified Lee; 500 bu. uncertified Hood; 6,800 bu. uncertified Black Wilson; 9,000 bu. uncertified Hill; 15,000 bu. Ogden.

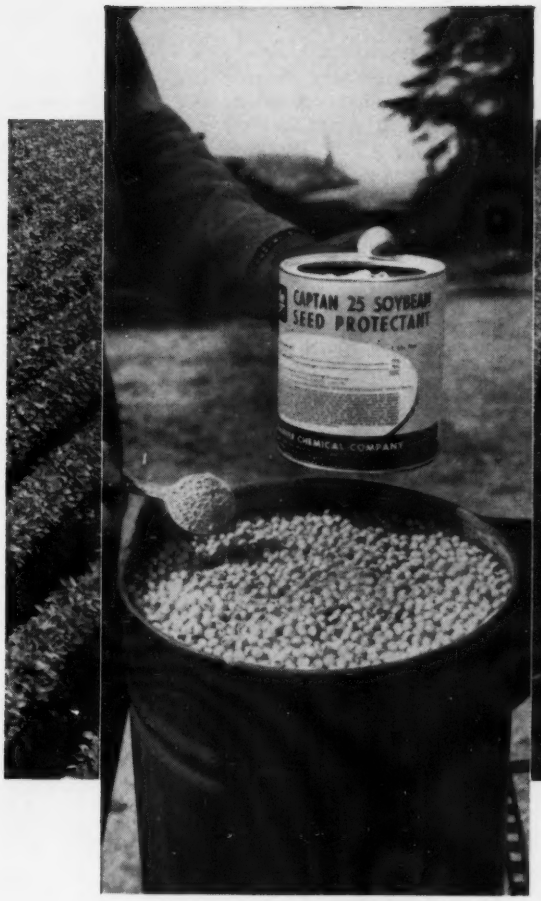
**Norfolk 15**—Davis Grain Corp., Box 7595, certified Hood, Lee, Ogden; registered Hill.

## Most Seed Cleaned

OVER 75% of the soybean seeds planted in Mississippi in 1959 were cleaned before planting, although only 31% were purchased from seed dealers, according to a planter box survey of soybean seed planted, H. Dean Bunch and James Delouche report in Mississippi Farm Research.

**ADVERTISE YOUR SOYBEAN SEED**

Space is available for additional listings in the April issue. Cost to subscribers to the Soybean Digest is $2 for the first variety listing and $1.00 for each additional listing.




# START OF AN IDEAL STAND!

Stauffer CHEMICALS

Soybean growers are quickly learning the advantages of treating their own seed right in the field.

It's easy and inexpensive with Stauffer CAPTAN 25 Soybean Seed Protectant because you apply it to seed in the planter box. CAPTAN 25 controls seed and soil-borne diseases, including damping-off, seed decay organisms and seedling blights.

The planter box method of application gives good coverage and eliminates additional handling. Any excess flows with the seed into the furrow, giving extra protection against soil-borne diseases. The recommended dosage is 4 ounces per bushel or 7 ounces per 100 pounds of seed. You can apply CAPTAN 25 to previously treated seed.

Help your seed. Use CAPTAN 25 Soybean Seed Protectant. See your dealer. Stauffer Chemical Company, 380 Madison Avenue, New York 17, N. Y.
Sales and service offices throughout the country.

# IN THE MARKETS

**FACTORY USE VEGETABLE OILS** for November and December 1960. Reported by Bureau of the Census.

**Selected edible oils: Production, consumption, and factory and warehouse stocks, December 1960 and November 1960 (million pounds)**

| | Cottonseed Oil | | Soybean Oil | |
|---|---|---|---|---|
| | Dec. 1960 | Nov. 1960 | Dec. 1960 | Nov. 1960 |
| Production: | | | | |
| Crude oils | 205.2 | *248.3 | 409.8 | 401.1 |
| Refined oils (once-refined)[1] | 159.4 | 176.7 | 295.1 | 279.5 |
| Consumption in refining[1] | 172.6 | 189.5 | 307.2 | 290.0 |
| Consumption in selected edible and inedible products, total[2] | 113.7 | 112.2 | 283.6 | 263.5 |
| Consumption in edible products, total | 113.3 | 111.7 | 268.0 | 246.2 |
| Baking or frying fats | 34.0 | 35.8 | 91.0 | 92.3 |
| Salad or cooking oil | 60.2 | 59.0 | 75.3 | 58.8 |
| Margarine | 18.5 | 16.0 | 98.0 | 92.6 |
| Other edible products[3] | 0.6 | 0.9 | 3.7 | 2.5 |
| Stocks, end of month, total[2] | 425.8 | *389.6 | 474.1 | 446.0 |
| Crude oils | 171.6 | *160.8 | 309.0 | 294.7 |
| Refined oils | 254.2 | 228.8 | 165.1 | 151.3 |

*Revised. [1] Production of refined oils covers only once-refined oil. Degummed soybean oil is reported as crude oil. [2] Includes hydrogenated fats (vegetable and animal) and other fats and oils "in process," (e.g. refined cottonseed includes stocks of stearin). [3] Includes confectioners fats.

**MELLORINE.** Production of mellorine and other frozen desserts made with fats and oils other than milkfat in the United States was estimated at 2,900,000 gallons in January, according to the U. S. Department of Agriculture. This was 12% more than in January 1960 and 44% more than the 1955-59 average for the month. January production jumped 32% over the preceding month.

**Production of "mellorine-type" frozen desserts, United States 1961**

| Month | 1955-59 average[1] | 1959[1] | Estimated 1960 | 1961 | Change from 1955-59 av. | Change from 1960 |
|---|---|---|---|---|---|---|
| | Thousand gallons | | | | Percent | |
| January | 2,016 | 2,273 | 2,595 | 2,900 | +44 | +12 |

[1] From enumerations.

**EXPORTS.** Preliminary data on U. S. exports of soybeans, soybean and cottonseed oils, and soybean and cottonseed cakes and meals for December 1960, with comparable data for December 1959 and cumulative totals for October-December in the marketing years 1959-1960 and 1960-61, by USDA's Foreign Agricultural Service.

| | Unit | December 1959 [1] | December 1960 | October-December [1] 1959-60 | October-December [1] 1960-61 |
|---|---|---|---|---|---|
| Soybeans | Bu. | 18,138,174 | 20,637,856 | 50,641,441 | 57,348,566 |
| Soybean oil: | | | | | |
| Crude | Lb. | 25,200,180 | 88,799,089 | 72,822,267 | 177,555,726 |
| Refined but not further processed | Lb. | 3,456,341 | 12,496,797 | 26,685,476 | 21,181,515 |
| Refined, deodorized and hydrogenated | Lb. | 4,581,411 | 9,957,996 | 26,156,555 | 29,961,725 |
| Cottonseed oil: | | | | | |
| Crude | Lb. | 23,940,653 | 24,269,069 | 88,296,264 | 74,160,544 |
| Refined but not further processed | Lb. | 15,699,348 | 5,218,981 | 56,826,634 | 16,833,872 |
| Refined, deodorized and hydrogenated | Lb. | 1,778,214 | 2,844,231 | 7,074,621 | 7,207,122 |
| Cottonseed cake and meal | s.t. | 34,097 | 3,636 | 91,849 | 29,999 |
| Soybean cake and meal | s.t. | 122,050 | 66,632 | 256,001 | 183,741 |

[1] Includes any revisions made by the Bureau of the Census.

**Soybeans: Inspections for export by ports and areas January 1961 (1,000 bu.)**

| | |
|---|---|
| **Atlantic** | |
| Philadelphia | 208 |
| Baltimore | 1,460 |
| Norfolk | 2,215 |
| Morehead City | 18 |
| Subtotal | 3,901 |
| **Gulf** | |
| Mobile | 2,730 |
| New Orleans | 4,289 |
| Port Allen | 867 |
| Corpus Christi | 114 |
| Subtotal | 8,000 |
| Totals | |
| January 1961 | 11,901 |
| January 1960 | 9,258 |

Based on weekly reports of inspections for export by licensed inspectors and does not include rail and truck movement to Canada or Mexico.

**Oilseed cake and meal: U. S. exports and imports, December 1960 (tons)**

| | Monthly | | | Season to date | | Season |
|---|---|---|---|---|---|---|
| | Dec. 1960 | Nov. 1960 | Dec. 1959 | Oct.-Dec. 1960 | Oct.-Dec. 1959 | Oct.-Sept. 1959-60 |
| **Exports** | | | | | | |
| Soybean | 66,632 | 65,043 | 122,050 | 183,741 | 256,001 | 652,300 |
| Cottonseed | 3,636 | 11,261 | 34,097 | 29,999 | 91,849 | 140,196 |
| Linseed | 1,720 | 17,580 | 21,964 | 22,889 | 44,430 | 62,574 |
| **Imports** | | | | | | |
| Copra | 200 | 677 | 373 | 1,212 | 1,248 | 8,197 |
| Cottonseed | 5,048 | 2,612 | 4,893 | 10,422 | 11,051 | 32,345 |
| Other | 43 | 0 | 1 | 45 | 1 | 2,359 |

Bureau of the Census.

**Soybean cake and meal: U. S. exports by country of destination, October-December 1959 and 1960 (tons)**

| | Oct.-Dec. 1960 | Oct.-Dec. 1959 | | Oct.-Dec. 1960 | Oct.-Dec. 1959 |
|---|---|---|---|---|---|
| Canada | 51,450 | 69,734 | Belgium & Luxembourg | 21,066 | 40,754 |
| Mexico | 4,561 | 2,013 | West Germany | 29,856 | 43,479 |
| Cuba | 5,300 | 4,068 | Spain | — | 6,445 |
| Venezuela | 1,695 | 2,384 | Italy | 4,657 | 14,910 |
| Sweden | 30 | 1,280 | Switzerland | 3,279 | — |
| Norway | 2,806 | — | Philippines | 5,924 | 3,271 |
| Denmark | 3,244 | 7,061 | Israel | 1,200 | — |
| United Kingdom | 202 | 656 | Poland | — | 8,387 |
| Ireland | — | 1,434 | Other | 4,971 | 6,044 |
| Netherlands | 35,785 | 39,679 | Total | 183,741 | 256,001 |
| France | 7,715 | 4,402 | | | |

Bureau of the Census.

**Oilseed meals: Production, stocks, foreign trade, and domestic disappearance, December 1959 and 1960 (1,000 tons)**

| | Stocks[1] Dec. 1 | Production | Imports[2] | Exports[2] | Domestic disappearance | Stocks[1] Dec. 31 |
|---|---|---|---|---|---|---|
| **December 1960** | | | | | | |
| Soybean | 114.1 | 886.7 | 0 | 70.0 | 825.3 | 105.5 |
| Cottonseed | 198.8 | 286.7 | 4.6 | 30.0 | 263.5 | 196.6 |
| Linseed | 34.1 | 25.1 | 0 | 20.0 | 14.6 | 24.6 |
| Copra | — | 12.6 | 0.5 | — | 10.4 | 2.7 |
| Peanut | 2.3 | 6.8 | — | — | 6.3 | 2.8 |
| Total | 349.3 | 1,217.9 | 5.1 | 120.0 | 1,120.1 | 332.2 |
| **December 1959** | | | | | | |
| Soybean | 79.2 | 790.5 | 0 | 122.1 | 681.5 | 66.1 |
| Cottonseed | 113.1 | 311.9 | 4.9 | 34.1 | 285.4 | 110.4 |
| Linseed | 38.9 | 32.9 | 0.4 | 22.0 | 9.1 | 41.1 |
| Copra | — | 9.3 | 0.4 | — | 9.7 | — |
| Peanut | 1.5 | 5.8 | — | — | 5.7 | 1.6 |
| Total | 232.7 | 1,150.4 | 5.7 | 178.2 | 991.4 | 219.2 |
| **October-December 1960** | | | | | | |
| Soybean | 82.8 | 2,581.5 | 0 | 187.1 | 2,371.7 | 105.5 |
| Cottonseed | 137.1 | 984.7 | 10.0 | 56.4 | 878.8 | 196.6 |
| Linseed | 29.4 | 105.7 | 0 | 41.2 | 69.3 | 24.6 |
| Copra | 6.0 | 37.7 | 1.5 | — | 42.5 | 2.7 |
| Peanut | 1.8 | 15.8 | — | — | 14.8 | 2.8 |
| Total | 257.1 | 3,725.4 | 11.5 | 284.7 | 3,377.1 | 332.2 |
| **October-December 1959** | | | | | | |
| Soybean | 58.5 | 2,451.6 | 0 | 256.0 | 2,168.0 | 66.1 |
| Cottonseed | 97.0 | 1,014.8 | 11.1 | 91.8 | 920.7 | 110.4 |
| Linseed | 33.3 | 119.5 | 1.0 | 44.4 | 68.3 | 41.1 |
| Copra | — | 33.2 | 1.2 | — | 34.4 | — |
| Peanut | 1.8 | 15.5 | — | — | 15.7 | 1.6 |
| Total | 190.6 | 3,634.6 | 13.3 | 392.2 | 3,227.1 | 219.2 |

**Soybeans: Inspections for export by coastal areas and country of destination, January 1961 (1,000 bu.)**

| | | | |
|---|---|---|---|
| **Atlantic** | | Netherlands | 1,333 |
| Norway | 176 | Belgium | 168 |
| United Kingdom | 474 | West Germany | 1,623 |
| Netherlands | 438 | Italy | 570 |
| Belgium | 37 | Korea | 173 |
| West Germany | 908 | Taiwan (Formosa) | 129 |
| Israel | 797 | Japan | 3,455 |
| Taiwan (Formosa) | 727 | Other | 2 |
| Other | 344 | Subtotal | 8,000 |
| Subtotal | 3,901 | Total January 1961 | 11,901 |
| **Gulf** | | Total January 1960 | 9,258 |
| Denmark | 547 | | |

Based on weekly reports of inspections for export by licensed inspectors and does not include rail or truck movement to Canada or Mexico. In some cases, the ultimate destination of the soybeans exported is not shown on the inspection reports. Therefore, the quantity for each country may vary from official Census data which are based on custom declarations.

**Title I, P. L. 480 exports for July 1960-January 1961**

| | January 1961 | | | July 1960-January 1961 | | |
|---|---|---|---|---|---|---|
| | Metric tons | Unit | Quantity | Metric tons | Unit | Quantity |
| Cottonseed oil | 860 | lb. | 1,896,000 | 13,347 | lb. | 29,424,000 |
| Soybean oil | 22,749 | lb. | 50,152,000 | 185,420 | lb. | 408,781,000 |

Foreign Agricultural Service, U. S. Department of Agriculture.

**PRICES.** Average price for soybeans received by farmers, effective parity, and support rates, reported by Agricultural Marketing Service (dollars per bushel).

| Average farm price | | | Effective parity | Ave. price as percent of parity | National average price support rate | | |
|---|---|---|---|---|---|---|---|
| Jan. 15 1961 | Dec. 15 1960 | Jan. 15 1960 | Jan. 15 1961 | Jan. 15 1961 | 1960 crop | 1959 crop | 1958 crop |
| 2.23 | 1.99 | 2.01 | 2.89 | 77 | 1.85 | 1.85 | 2.09 |

Average farm and parity prices from crop reporting board.

**Soybean prices compared with market value of soybean oil and meal**

| | Soybean oil: Average price at crushing plant | Soybean oil: Value from bu. of soybeans[1] | Soybean meal: Bulk price at Decatur | Soybean meal: Value from bu. of soybeans[1] | Value of oil and meal from bu. of soybeans[1] | Market price No. 1 yellow soybeans Ill. pts. | Spread between soybean price and value of oil & meal |
|---|---|---|---|---|---|---|---|
| | Cts. per pound | Dollars | Dollars per ton | Dollars | Dollars | Dollars per bu. | Cents |
| Jan. 1961 | 10.7 | 1.18 | 54.25 | 1.27 | 2.45 | 2.37 | 8 |
| Dec. 1960 | 9.9 | 1.09 | 51.25 | 1.20 | 2.29 | 2.15 | 14 |
| Nov. 1960 | 10.0 | 1.10 | 44.50 | 1.05 | 2.15 | 2.05 | 10 |
| Oct. 1960 | 9.3 | 1.02 | 48.95 | 1.15 | 2.17 | 2.04 | 13 |
| Sept. 1960 | 9.0 | 0.99 | 53.75 | 1.26 | 2.25 | 2.07 | 18 |
| Jan. 1960 | 7.7 | 0.85 | 61.50 | 1.45 | 2.30 | 2.11 | 19 |

[1]Based on assumption that a bushel of soybeans yields 11 pounds of oil and 47 pounds of meal. Note: This table is for statistical comparison only. It does not reflect actual operating margins since prices are simple averages and do not take into account location differentials or actual purchases and sales of soybeans, soybean oil or soybean meal.

**SUPPLY, DISTRIBUTION** of soybeans for the 1957-60 crop years, from Agricultural Marketing Service (1,000 bushels).

| | 1960-61 | 1959-60 | 1958-59 | 1957-58 |
|---|---|---|---|---|
| Carryover, Oct. 1 | 23,209 | 62,117 | 21,083 | 9,897 |
| Production | 558,778 | 533,175 | 579,713 | 483,715 |
| Total supply[1] | 581,987 | 595,292 | 600,796 | 493,612 |
| Farm use, including seed for season | 35,000 | 39,000 | 28,000 | 34,000 |
| Quantity remaining for processing, export or carryover | 546,987 | 556,292 | 572,796 | 459,612 |
| Disappearance, Oct. 1 through Jan. 31: | | | | |
| Crushed for oil or processed[2] | 148,320 | 139,163 | 138,122 | 116,818 |
| Exported[3] | 69,349 | 60,904 | 47,354 | 46,447 |
| Total | 217,669 | 200,067 | 185,476 | 163,265 |
| Balance on Feb. 1 for processing, export, or carryover | 329,318 | 356,225 | 387,320 | 296,347 |

[1] Imports not included because negligible. [2] No allowance is made for new-crop crushings prior to Oct. 1. [3] Estimated.

**INSPECTIONS.** Inspected receipts, by grade and percent, reported by Agricultural Marketing Service.[1]

| Grade | January 1961[2] 1,000 bu. | Pct. | December 1960 1,000 bu. | Pct. | January 1960 1,000 bu. | Pct. | Oct. 1960-Jan. 1961 1,000 bu. | Pct. | Oct. 1959-Jan. 1960 1,000 bu. | Pct. |
|---|---|---|---|---|---|---|---|---|---|---|
| No. 1 | 11,862 | 31 | 5,521 | 16 | 4,748 | 20 | 67,882 | 25 | 40,451 | 17 |
| No. 2 | 16,858 | 44 | 16,603 | 47 | 12,576 | 52 | 128,937 | 46 | 114,515 | 50 |
| No. 3 | 6,635 | 17 | 9,577 | 28 | 4,446 | 19 | 55,814 | 20 | 54,548 | 24 |
| No. 4 | 2,320 | 6 | 2,579 | 7 | 1,469 | 6 | 20,250 | 7 | 14,742 | 6 |
| Sample | 741 | 2 | 812 | 2 | 728 | 3 | 5,886 | 2 | 6,703 | 3 |
| Total | 38,416 | 100 | 35,092 | 100 | 23,967 | 100 | 278,769 | 100 | 230,959 | 100 |

[1] Carlot receipts have been converted to bushels on the basis that 1 carlot equals 1,750 bushels. [2] Of the January receipts 1,750 bushels were black, 3,500 mixed and the remainder yellow soybeans. Inspections of soybeans in January included 5,690,456 bushels as cargo lots, 3,374,844 bushels as truck receipts, and the balance as carlot receipts. Based on reports of inspections by licensed inspectors at all markets.

**PROCESSING OPERATIONS.** Reported by Bureau of the Census for December 1960 and January 1961.

**Primary products except crude oil at crude oil mill locations: Production, shipments and transfers, and stock, January 1961-December 1960 (1,000 short tons)**

| | Production | | Shipments and transfers | | Stocks end of month | |
|---|---|---|---|---|---|---|
| | January 1961 | December 1960 | January 1961 | December 1960 | Jan. 31, 1961 | Dec. 31, 1960 |
| Soybean: | | | | | | |
| Cake and meal | 891.6 | 874.3 | 863.6 | 883.0 | 130.0 | 102.0 |
| Millfeed (hull meal) | 13.3 | 12.4 | 12.9 | 12.3 | 3.9 | 3.5 |

**Soybeans: Net receipts, crushings, and stocks at oil mills, by states, January 1961-December 1960 (1,000 short tons)**

| | Net receipts at mills[1] | | Crushed or used | | Stocks at mills | |
|---|---|---|---|---|---|---|
| | January 1961 | December 1960 | January 1961 | December 1960 | Jan. 31, 1961 | Dec. 31, 1960 |
| U. S. | 1,130.2 | 777.1 | 1,149.8 | 1,130.7 | 3,298.5 | 3,318.1 |
| Arkansas | 3.1 | 18.5 | 21.8 | 32.0 | 157.0 | 175.6 |
| Illinois | 429.0 | 218.3 | 351.7 | 351.0 | 730.4 | 653.1 |
| Indiana | 80.1 | 44.7 | 106.0 | 98.5 | 303.8 | 329.8 |
| Iowa | 214.2 | 122.3 | 192.4 | 198.4 | 380.3 | 358.4 |
| Minnesota | 62.2 | 75.8 | 77.4 | 73.2 | 117.9 | 133.1 |
| Mississippi | 9.6 | 32.8 | 37.3 | 30.5 | 198.8 | 226.4 |
| Missouri | (2) | (2) | (2) | (2) | (2) | (2) |
| Nebraska | (2) | (2) | (2) | (2) | (2) | (2) |
| North Carolina | 10.2 | 41.4 | 16.1 | 15.3 | 98.8 | 104.7 |
| Ohio | 69.8 | 53.7 | 90.9 | 95.7 | 303.1 | 324.3 |
| Tennessee | 96.3 | 74.9 | 87.3 | 85.1 | 417.1 | 408.2 |
| All other | 155.7 | 94.7 | 168.9 | 151.0 | 591.3 | 604.5 |

Note: Detail figures may not add to totals because of independent rounding. [1] Net receipts for each state are derived from the quantity of beans crushed and net change in stocks. [2] Included in "All other" to avoid disclosure of figures for individual companies.

**Soybean products: Production and stocks at oil mill locations, by states, January 1961-December 1960**

| | Crude oil (million pounds) Production | | Crude oil (million pounds) Stocks | | Cake and meal (thousand tons)[1] Production | | Cake and meal (thousand tons)[1] Stocks | |
|---|---|---|---|---|---|---|---|---|
| | January 1961 | December 1960 | Jan. 31, 1961 | Dec. 31, 1960 | January 1961 | December 1960 | Jan. 31, 1961 | Dec. 31, 1960 |
| U. S. | 418.7 | 409.8 | 113.1 | 92.6 | 904.9 | 886.7 | 133.9 | 105.5 |
| Arkansas | 8.3 | 11.6 | 0.9 | 2.1 | 17.3 | 24.6 | 2.8 | 5.5 |
| Illinois | 132.7 | 131.0 | 40.5 | 36.3 | 271.5 | 266.3 | 45.9 | 38.5 |
| Indiana | 37.6 | 35.5 | 15.8 | 6.2 | 83.5 | 77.7 | (2) | (2) |
| Iowa | 68.8 | 70.2 | 12.8 | 13.0 | 153.9 | 159.2 | 19.1 | 13.3 |
| Minnesota | 27.6 | 26.1 | 11.3 | 6.2 | 59.7 | 58.1 | 3.9 | 4.5 |
| Mississippi | 13.5 | 11.2 | 2.4 | 1.5 | 28.5 | 23.9 | 4.3 | 3.3 |
| Missouri | (2) | (2) | 2.1 | (2) | (2) | (2) | (2) | (2) |
| Nebraska | (2) | (2) | (2) | (2) | (2) | (2) | (2) | (2) |
| N. Carolina | 5.3 | 5.1 | 1.8 | (2) | 12.9 | 12.3 | 1.7 | 2.0 |
| Ohio | 33.3 | 34.5 | 7.8 | 7.4 | 73.5 | 77.4 | 5.2 | 5.0 |
| Tennessee | 32.0 | 30.7 | 5.7 | 5.2 | 68.5 | 66.3 | 7.5 | 6.7 |
| All other | 59.6 | 53.9 | 12.0 | 14.7 | 135.6 | 120.9 | 43.5 | 26.7 |

Note: Detail figures may not add to totals because of independent rounding. [1] Includes mill feed (hull meal). [2] Included in "All other" to avoid disclosure of figures for individual companies.

# Look inside a Carter Scalperator...

# discover why it's best for soybeans

Note how the unique scalping and aspirating features make a Carter Scalperator ideal for use on soybeans as they are received, particularly ahead of drying operations.

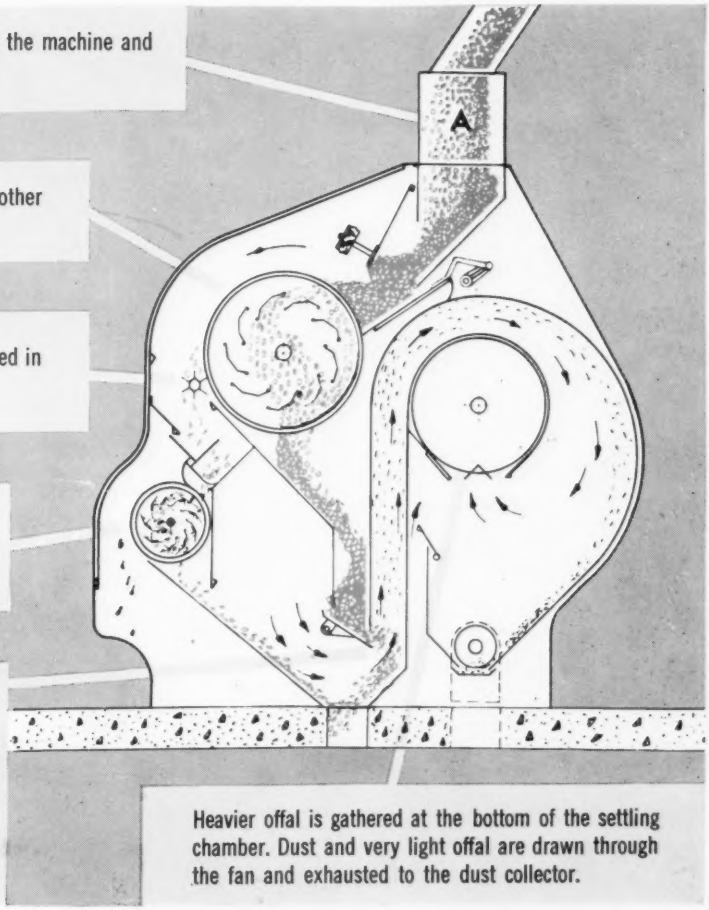
Soybeans enter the Scalperator at the top of the machine and feed at desired capacity to large scalping reel.

Main scalping reel scalps off sticks, stems, other roughage from beans.

String wiper removes string and straw entwined in the wire mesh of the scalping reel.

Roughage is carried over, and good beans salvaged at the smaller scalping reel.

Scalped beans flow down to aspirating area where a uniform current of air passes through them. The material removed by the aspiration is drawn up the aspirating leg.




Heavier offal is gathered at the bottom of the settling chamber. Dust and very light offal are drawn through the fan and exhausted to the dust collector.

Carter Scalperators have high capacity with low power requirements. They are non-clogging and easy to clean when bean varieties are changed, or other grains are to be cleaned.

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